The Australian
COMMODORE
and AMIGA REVIEW

▼ Digi-Paint 3
▼ Platinum Scribble   ▼ Animagic
▼ DG Calc   ▼ Pen Pal

Pen Pal 1.1.9 - PAL   12:09 AM

Work:pages/jan90/Penpal

Friend or foe?

PEN
PAL

Eric Holroyd is a
registered user of
Softwood Write and File. It
is no secret that Pen Pal is
very closely modelled on this earlier program. According to Eric,
he sent his comments as instructor, but he only heard two of reasonable advise and
any update. Perhaps they'll let him know soon that Pen Pal has

▲ Drive Doctor   ▲ Disk Editing
▲ 3D Graphmaker
▲ Increasing Basic Speed

The Australian
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Editorial

HERE WE ARE stepping into a new decade with a ring to the year that sounds like it belongs in the foreword to some space game shoot'em up. *The Australian Commodore Review* moves into its seventh year of publication. Over the last six years we have seen some dramatic changes in the home computer scene.

In the early days, we concentrated on the Vic-20, which originally sold for $399 complete with 5K of RAM. Now, the Commodore 64 with 64K of RAM, double the graphics resolution and thousands of software titles to choose from, is half the price - and going down.

For double the price of the old Vic-20 you now get a 512K, multi-tasking, 4096-colour computer capable of things that were previously only dreamed of.

The step up from the Vic-20 to the Commodore 64 was a natural progression for many. The computing environment was very similar - the basic architecture of the machine was almost identical. However, moving from the Commodore 64 to the Amiga is a different step altogether. The Amiga represents a major step forward in computer technology even four years after its initial release. With the operating system being further enhanced, the gap between serious computing, and the power of home systems will probably vanish.

This situation presents some difficulties. Commodore dealers, the media, consumers and Commodore themselves still shake their combined heads in bewilderment that the C64 continues to sell so well. The consensus of recent discussion was that providing it is available at the right price point, it may well have a life of quite a few years left in it yet.

That too depends on what other machines turn up, and at what price the A500 remains. Early indicators suggest it is unlikely that the A500 will fall much farther below its current price levels, as the circuit board has already been consolidated considerably and is reaching current limitation of chip technology.

Somewhere between the A500 and the A2000 there is a gap. Let's hope Commodore fills it soon. ❑

Andrew Farrell

C64ers

Mega-Adventure

· A brave soul has stepped forward into the land of software marketing under the Nova Productions label to further enhance the available range of C64 text adventure games. This humorous, high-speed game uses the usual verb-noun command format. Australian designed and manufactured - complete with after sales support in the form of hint sheets and maps - at a cost of $25. For further details call (065) 731619. (Full review in Realm soon . . .)

Multicoin to handle Turbo ROM

● Cockroach software, designers of the famous Cockroach Turbo ROM, are having their latest product, the Turbo ROM Cartridge, distributed by Multicoin - the guys who make the amazing Starcursor joystick (075-375711).

Multicoin will also distribute the Graphics Utility cartridge which enables graphics to be snap-shot, edited and saved to disk or printed. The Turbo ROM Cartridge will sell for $39.95 and the Graphics Utility for $59.95.

New hardware!

● A number of C64 hardware products will arrive in Oz soon from Computermate. These include a digitiser which is reported to be better than the currently available Computer Eyes, and a Teletext decoder. Stay tuned for more information.

Dataflow to support C64 in future!

● Following high level discussions with various executives here at the *Commodore Re-*view*, Commodore's PR company, The Others, suggested to Dataflow that the C64 could do with a bit more software support ...

Well, they reacted quickly, and promptly imported quantities of Timeworks products, and a number of other entertainment titles. Dataflow are well known for their excellent support and backup. Their presence is a welcome addition to the small number of companies still importing quality C64 programs outside of the games arena.

Initial titles include the following very professionally packaged programs:-

● **Partner 64.** Cartridge based suite of desktop accessories which may be activated even when you are in another program. Includes Appointment Calendar and Date Book, Memo Pad, Name, Address and Phone List, Auto Dialer, Calculator, Typewriter, Label Maker and Screen Printer. SwiftDOS is built in for easy access to DOS commands and Swiftload speeds loading times by a factor of five. Swiftlock enables your computer to be locked by a code. RRP $59.95.

● **Sideways.** Enables you to print spreadsheet reports wider than your printer paper by printing vertically rather than horizontally. Sideways can print any normal text files of any width, in a variety of type sizes, line spacing, variable margins and character spacing. Runs on either a C64 or C128 in 80 columns. Compatible with the following spreadsheet programs:-

● Better Working Spreadsheet
● Creative Calc
● Calc Now
● Microsoft Multiplan
● Cal-Kit
● Practicalc 64

or any spreadsheet capable of producing a text file (ASCII) of output and/or interfaces with a wordprocessor. Printer supported must be dot matrix, and have bit-mapped graphics facility:-

Commodore 1525, 801, 803, 1526, 802, Gemini, Epson, Okidata, C.Itoh Prowriter and NEC 8023. RRP $29.95

● **Swiftcalc.** GEOS compatible, interfaces with Data Manager or Word Writer 2. Sideways option, 250 rows x 104 columns, 12 digit math functions, minimum, maximum, average, sums, integers, absolutes and exponentials. HELP screens, bar charts, budgeting, and keyboard overlays. RRP $39.95.

● **Data Manager 2.** Menu driven database, with reports, graphics, statistics and label making. Backup facility, X-Search for multiple-field cross referenced searching, X-SORT and X-CHART work in a similar fashion. Sum, Average and Standard Deviation and frequency charts. RRP $39.95.

More information from Dataflow on (02) 331 6153.

❑

Ram Rumbles

Commodore in the media

Response to our new "Commodore in the Media" section has been a little sluggish! Come on, everyone - I'm sure there are some great new movies out there with at l , t one Commodore scene, not to mention some of the Australian documentaries, soapies and series. So keep us informed. Send in your sharp-eyed spottings of Commodore computers getting free publicity in the media and one entry each month will win a FREE 12 month subscription.

● **Quantum:** ABC drama and suspense saw Quantum leap across to the Northern Queensland where we learn Amigas are in heavy use as weather analysis and forecasting machines.

● **In Germany** a fleet of Amigas are used for tele-prompting. Yes, when you see your newsreader look down, it's a fake. Everything they say, except the ad-lib bits, appears on a screen which is superimposed over the camera lens. In Germany, the computer generating the text is Amiga - well, that's almost in the media, isn't it?

User Group update
● **North-Side User Groups**
It seems all of Sydney's Commodore user groups are miles from the city. Well, there is one close in that is starting to get more organised. SYDCOM has a long history - originally attracting 300-plus members to meetings in the city - now located at the Ryde Catering College. They are very keen to hear from new Commodore owners. Persons interested in joining may contact Larry Noonan on (02) 399 9591.

● **Albury/Wodonga meetings change**
Also a reminder to those associated with the Albury-Wodonga Commodore User Group - monthly meetings are now to be held on the first Monday of each month at 7.30pm. Contact Terry Hodda for details via Microtex 602147410.

● **Rockhampton Update**
If you live in the wild north, the 1st Saturday of each month, jump into your 4x4 and head down to the local meeting at 1.30pm. Amiga owners are also welcome.
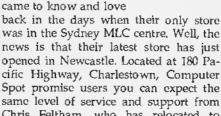
More anti-grey-market action

Not content with their win over grey-market importers of Star printers, Star Micronics have now moved to quash "grey ribbons" too! According to Star's general manager, Bruce Elliot, these non-Star products have been responsible for many phone calls from irate end users complaining of ribbon jams, longevity problems and broken ribbon spindles and, worst of all, printer head damage. Sounds pretty nasty!

Owners of Star printers are urged by Star to purchase only Star ribbons which contain a large silver certified sticker on the packaging. Please watch this space for notices regarding grey-market certified stickers.

A Newcastle Spot

A few months ago, MicroComputer Spot changed their name back to Computer Spot, the original name we came to know and love back in the days when their only store was in the Sydney MLC centre. Well, the news is that their latest store has just opened in Newcastle. Located at 180 Pacific Highway, Charlestown, Computer Spot promise users you can expect the same level of service and support from Chris Feltham, who has relocated to Newcastle especially to manage the store in question.

Notepad

Lotest AMI-Expo unexpected super-success!

● On November 10, 11 and 12, 57,000 people per day streamed through Ami-Expo in Cologne, West Germany. This unprecedented number of visitors was way above the expectations of both the organisers and exhibitors. A very high level of enthusiasm was generated within the industry at a time when some American companies are giving the Amiga second thoughts. Germany is reported to be the largest market of Commodore consumers in the world - even larger than the Unites States.

Desktop Video continues to dominate as the fastest growing product area. Many new frame grabbers, genlocks and animation or presentation packages were demonstrated. Newtek also showed off their video toaster, and a couple of new Demo Reels, which we hope to have available soon to our readers.

The show appears to have been a resounding success - wouldn't it be great to see something like this in Australia. American software companies have already expressed interest in such an event, so we may well see it some time late this year.

A mouse without o toil

● *My desk is unbelievably cluttered. The arrival of my own BMC cordless mouse was a welcome relief. Using Infra-Red technology, the need for a lead is done away with, freeing your desk considerably. The receiver need not be located at desk level - mine sits happily to the left of the monitor,*

on top of my A2000. RRP $179 - full test report soon. See your local dealer or call Computer Magic on (07) 812 1611.

Amigo desktop publishing bureou

There aren't many places where you can get your Amiga desktop publishing printed out on a laser printer. One is open now - Desktop Utilities in Manuka ACT, which can do 300 dots per inch laser printing from major Amiga packages. You can send a disk by post, or upload your files to the Desktop Utilities bulletin board via modem. They can also do file transfers between formats. For further information call (062) 39 6658 or the bulletin board number, (062) 39 6659.

New Products
Home Front

● A complete management system to keep your family's affairs in order. Hot keys or point and click menus operate this un-copy-protected package which includes:- Accounting Manager, Forecasting Manager, Inventory Manager, Recipe Manager, Address Manager. With the time you save organising your household affairs, you'll be able to read the documentation of other products you long wished you had the time to understand. RRP $125 from Computermate (02) 457 8118).

Top Form

● If you find yourself dragging out the ruler, marking dashes on the pages 5mm apart and joining the dots in a

vain bid to design a neat and presentable form, this program is for you. *Top Form* is a one stop form shop which enables virtually any type of form to be produced using a standard dot matrix printer. The package includes 100 pre-designed forms ready for you to edit or customise for your own business. RRP $109 from Computermate.

Polaroid Direct Screen Comero

● *If you have a need for screen photographs in black and white or colour, the new Polaroid screen camera promises to do it with more ease than any previous product. In essence, it's a point and shoot camera with an extension shroud that fits snugly against the screen.*
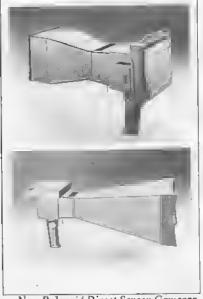
You simply position the camera - all extra light is safely cut out - and then press the button. Minutes later the self-developing film is ready and you can use the output. No software is required. No doubt this product would be ideal for quick presentations, production companies, CAD/CAM and computer magazines. Two models are available ranging from $300-$600 ex-tax. For further information contact B&P Marketing, Polaroid Australia on (02) 887 2333.

LOGO

● Hands up if you started life as a turtle! Remember the days spent, probably on an Apple II, plotting and rotating until your dream house took shape? LOGO is now available for the Amiga, and remains second only to BASIC as an educating tool to teach logic, creativity, geometry and numbers and simple programming concepts. Although LOGO has remained relatively unchanged since the early days, the Amiga version contains a number of extended commands and enhancements. These are

designed to make use of Amiga's superior power in the graphics and colour department. Support for speech is included too! LOGO is the ideal class room tool to soften the introduction to computers by providing an entertaining, but educational pathway to more complex applications. RRP $59 from Commodore.

New Polaroid Direct Screen Cameras

Desktop video BOOKS!

● Two new entries to the desktop video book market will be available early next month. Most excitingly, a local publication by Brett Sullivan will be released covering many aspects of desktop video with special relevance to Australia conditions and market.

From Abacus, Guy Wright, previously with AmigaWorld and at one time involved with T.FV. productions, has written a complete introduction with three types of studios recommended from a large range of products evaluated in the United States. More info soon.

Updates
Elan Performer: PAL version
● *Upgrade approx. $10 expected late January. Contact Computermate on (02) 457 8118.*

Workbench 1.3.2 Release
● This has been released semi-officially in the US, and I'm told is now included as part of the 1.3 Enhancer Package here in Oz. Seems to be a general bug-squasher, and I believe that 1.3.2's only difference from 1.3.1 is a fix for a bug in Diskcopy which didn't allow you to copy using one drive.

The release contains new versions of the following programs:

SetPatch, LoadWB, Eval, SetClock, Mount, DiskDoctor, Format, Diskcopy, Fast-MemFirst, NoFastMem, Set-Map, CMD, ClockPtr, Pipe-Handler, Speak-Handler, FastFileSystem, Aux-Handler, version.library, info.library, serial.device, printer.device.

This is what was changed in each of the programs:
C
● SetPatch a) Alert code fixed to work with 1 meg chip ram machines. b) TrackDisk Ge-

tUnit patch added. c) DOS Execute() patched that uses RUN from the resident list. d) UserState patch for 68010.
● LoadWB a) LoadWB now closes icon.library.
● Eval a) () added; also parses strings in a more relaxed manner.
● DiskDoctor a) incorrect error message (out of memory) changed. b) uses BufMem-Type so works with large hard drives.
● FF : NOTE - NOT AVAILABLE FOR ELECTRONIC DISTRIBUTION a) incorrect use of font flags fixed.
● SetClock a) reset option now skips clock validity check.
● Mount a) BAUD and CONTROL mountlist keywords added for multiserial use. b) full option added to startup to create handler entries with full environment support.
System
● Format a) works with large hard drives (uses bufmem-type). b) inhibit logic fixed. c) secondary results are properly set. d) better error messages. e) only opens icon.library if it needs icon.library. f) NOFFS keyword removed (was not useful)
● Diskcopy a) uses fast memory in a single drive copy if chip ram is unavailable. b) single disk copy on a 1 meg

chip ram machine works. c) verify by default; noverify option added. d) Only opens icon library if it needs icon library. e) If diskcopy fails, the failure cylinder is left showing. on the screen. f) secondary results are properly set. g) better error messages. h) MULTI keyword allows multiple copies of single disk.
● FastMemFirst a) tests for chip memory properly (it worked fine before; however, it was incorrect).
● NoFastMem a) changed to

also specific divert calls on fast memory to public memory.
● SetMap a) kludge added to make sure that, under V34Kickstart and below, a keymap never spans a 64K boundary.
L
● Pipe-Handler a) names are now case-indifferent.
● Speak-Handler a) no longer

loses 10K when unknown packet received. b) OPTs are now case indifferent.

● FastFileSystem a) File system no longer fails if the boot block of a disk contains a zero in the first longword. b) Whenever a file not in the root was altered, the datestamp of the root block would be altered. This has been fixed, the last modified date is now altered instead. c) Due to a calculation error when writing out the bitmap the disk would always validate on restart if it was >308Meg. This has been fixed. New limit is REALLY 2.5 Gig. Tested to 600Mb.

● Aux-Handler a) Sets the flags to 0 on open of the serial.device.

Utilities

● CMD a) works with device names that have odd number of characters b) QUERY function added so works with printer drivers that query the printer.

● ClockPtr a) switched over to the European version with the 24 hour option.

Libs

● info.library a) no longer improperly combine tooltypes

● version.library a) version number changed.

devs

● serial.device a) no longer crashes on mismatched baud rate. b) Refuses to open unavailable units. c) Lower overhead.

● printer.device a) support for multipass printers fixed.

Arexx 1.10

● You should have been notified about this - if not, send in US$5 and P&P to William Hawes. His address is in the manual.

Sculpt-Animate 4D

● *Suggested retail price is US$499.95. Current owners of Sculpt 3D and Animate 3D may upgrade for US$400 (if you have Sculpt 3D only), or US$250, if you have both programs. You have to send in your manual cover(s) with warranty registration*

cards. *See their address in your manual.*

Lattice Comms Library

● This is a new set of C functions for communications, including support for XModem, Ymodem, Kermit and ASCII, along with autodial/answer, error-checking, etc. Costs US$250, with source code an extra US$250.

Lattice also has a C package, whose price was recently reduced from US$500 to US$300, a good move. There are also further discounts to current owners of other Lattice products: owners of the C Compiler can reduce the price by a further US$100, and C owners can do likewise with the C Compiler package. Get your coupons through Lattice's customer service department.

From: 2500 S. Highlanzed Ave, Lombard, IL 60148 USA. Tel: (312) 9161600.

More tools for The Director animation software

● Most people know that this program lets you script your own animations (which are compatible with *DpaintIII* animations). Now they've released their Tutorial Video for US$39.95, which takes you through the whole process, including advanced techniques. Likewise there's now a Toolkit for the same price, a disk to add more features to the original, such as a new BLIT utility, and some ways to automate the animation process. Add US $5.00 for shipping. Contact: Right Answers, Box 3699, Torrance, CA 90510 USA

BUG-Watch
by Tim Strachan

Fatter Agnus Bug?

● *John Steiner in Amazing Computing gives a test for whether your Fatter Agnus is defective - run the Clock and Lines*

demo simultaneously from the Demos drawer of your original Workbench. If after about half an hour, the Clock is doing odd things, or lines are being drawn outside the window of Lines, your chip is defective. Contact Commodore under warranty for replacement.

A-Max

● The original program release had a few bugs with SetPatch and printing routines, now fixed. If the "Readme" file on your A-Max disk mentions Hyper-Card, then you have the latest version.

Intuition bug

● Sometimes, usually if you have two interlaced screens and one non-interlaced up together, you'll get a Guru when you switch screens, due to a bug in Intuition (the operating system). I'm told that there is a program that fixes this called FIX-INTUITION which can be run

from the startup-sequence. Has anyone got it?

B.A.D. 3.11

● *It seems that if you have two disks in the drives with the same name, the computer will freeze. So make sure they are named differently, and you'll be okay.*

Serial.device bug

● Greg Perry tells us that PAL Amigas have problems sending info through the serial port at 19,200 baud, but that NTSC Amigas don't. Anyone know why?
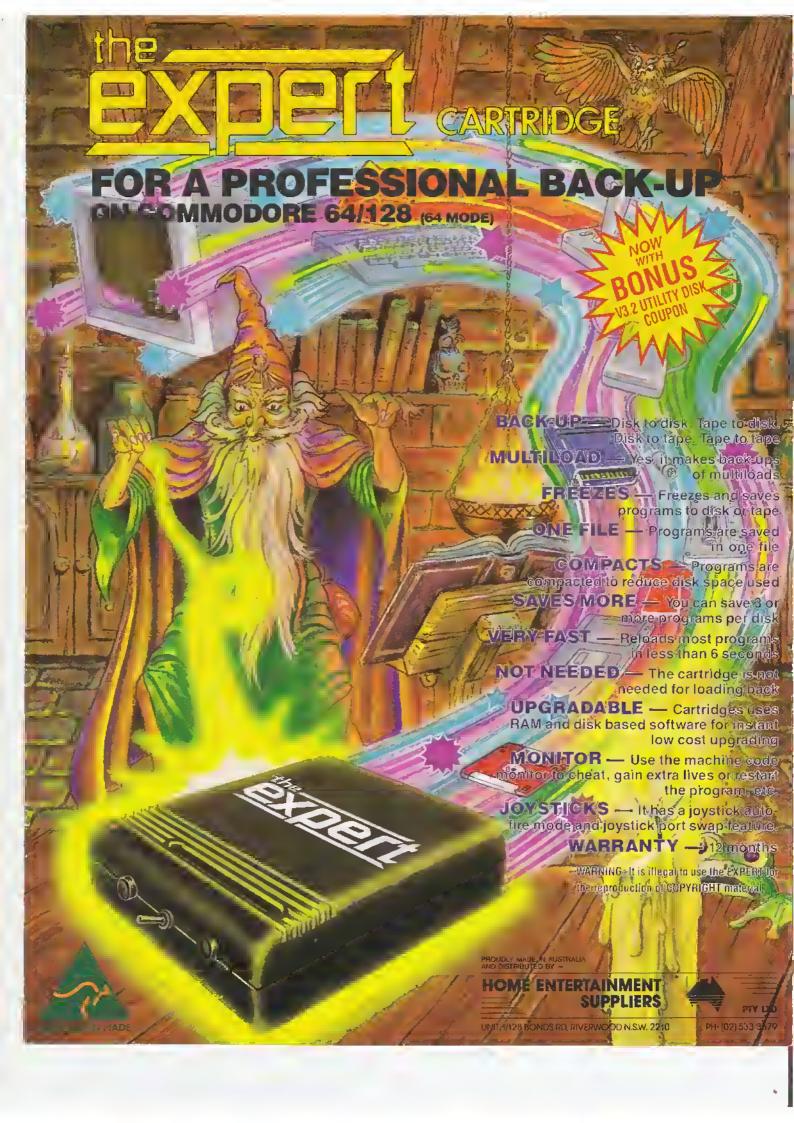
68030 and Amigabasic

● Seems that it won't run with a 68030 board, due to a bit of mis-programming by Microsoft who originally wrote Amigabasic. But then again, should only affect about 1 in 1000 at the moment. I wish I were so afflicted.

brush sizes there are seven different Brush Shapes ranging from single pixel, horizontal line, vertical line, left slant, right slant, square and round brushes.

The Tools selection area also contains a Scissors icon for cutting out custom brushes in any shape or size (memory dependent). Scissors works in conjunction with the currently selected brush, for example if the circle brush is in use then the brush will be picked up as a circle by dragging out the cursor to the required size. A Magnify gadget activates the magnify tool and allows a 8x increase within a separate screen window that can be moved up or down by dragging its top title bar.

Other icons within the Tools section are Undo, and a Drawing Mode/coordinates indicator. A Repeat button allows the user to repeat the last drawing action that has taken place within the work screen area. Finally, Tools has icons to get you to other selection areas, these are Controls, Text and Palette.

Controls

The Controls section of *Digi-Paint* is where the program's new features are to be found and the real power of HAM painting lies. A Dithering icon selector is available for regular pattern colour mixing, or random colour mixing. Dithering adds more colours to the screen by using a mixture of two colours to simulate a third. *Digi-Paint 3* uses 30 bits per pixel accuracy to calculate dither patterns, this adds up to over one billion colour calculations! Anti-aliasing, the technique of "smoothing" jagged images, can be turned on, for auto-aliasing, or off via a Smoothing selector.

Now for the fun bits contained within the Controls section, Tiling, Warping and Transparency.

Put simply, Tiling allows you to paste down custom brushes in multiple copies and is used in conjunction with the Warp controls. To create a tiled effect you must have pre-chosen a brush and then select the number of tiles required; the maximum is nine by nine with any variation allowed below those numbers. As an example if you have chosen two horizontal

tiles and three vertical tiles from the selector's range you will end up with six copies of the original custom brush within the shape you have drawn out on the screen.

The Warping control panel gives the user a range of options from no image warping to severe via a vertical selection slider. An example of the warp command is when tiling is used to fill a drawn circle with a custom brush. If warp is set to zero then the filled circle will look flat, but if the warp control is set anywhere but zero then the final image will take on a three dimensional look, similar to a globe of the world.

Warping direction can be controlled in either a horizontal or vertical direction, or combinations of both. Although the selection of warping also turns on the tiling selector, and vice versa, each control can be used on its own.

The Transparency control panel allows the user to determine the amount of image transparency present when you draw on the screen or paste brushes down. Two individual sliders are available to alter the amounts of transparency used on a screen image. The first slider controls the hotspot (the brightest section) of the transparency from zero to 100%, whilst the second slider adjusts the edge transparency of the shape drawn. The hotspot can be placed into any position by manually moving its selection point over a representation of a three dimensional ball, this virtually allows you to shift the "lighting direction" within the transparency mode to any desired position required.

The transparency controls are also interactive and you can manipulate them (in real time) while an object is being drawn, which can make for some interesting and unusual image effects. The Warping control is also interactive.

Palette

The third *Digi-Paint* toolbox section is the Palette. This can be accessed by clicking on its respective icon found in the other toolbox sections. A 16 colour strip shows the currently selected "base" colours, and positioned directly under each

base colour is a range of that particular colour progressing from the lightest version to the darkest (which is usually black). Any of the colours in the ranges shown may be chosen as the current colour by clicking on them.

RGB sliders are also located within the palette controls. These sliders represent the RGB (Red, Green, Blue) colour values of the current colour shown in a scale from zero to fifteen (zero is black and fifteen is the brightest value of the colour). Each slider can be altered independently to produce any of the available 4096 colour choices.

A Pick Colour button lets you pick a colour from the current work screen area; this can save you the trouble of trying to figure out exactly which colour you want. The right hand side of the palette toolbox contains three large colour selectors; these represent portions of the 4096 available *Digi-Paint* colours. By moving the mouse within each square the RGB sliders can be seen to alter their colours dramatically as you glide around the 4096 choices.

Text

The fourth, and final, toolbox section is Text. It is here that the Font File Requester is found and where any bit-mapped font can be imported for use. Clicking on a Smoothing icon allows text fonts to be automatically anti-aliased, this has the effect of softening the font edges to give a much greater apparent resolution. Smoothing the text also results in a horizontal compression (squeezing) of the font.

The default smooth mode is off. Three Font Style modes are available, Bold, Italic, Underline, and any or all styles can be chosen at one time.

Unlike *Deluxe Paint*'s text mode (where you type onto the screen area direct) *Digi-Paint*'s text is first typed into an entry window, the resulting text is then automatically transferred to the work screen as a brush. I'm not too fond of this method as you really do not get a good look at your text style, size and placement until you have completed typing it into the entry window. If you find it too large, or whatever, you have to start all over again.

If you want to use ColorFonts, such as

the eight colour Hi-Res Kara fonts, forget it. The only way to use ColorFonts is to construct your wording in *DPaint* and import the picture into *Digi-Paint* where the text can be cut out as a custom brush and placed on the screen in your chosen position. There are three new fonts supplied on the *Digi-Paint* program disk, they are Texas, Melba and Cinnamon, but all three are nothing really special to look at.

Digi-Paint's pull-down menus consist of six main menus. The Picture menu gives you eight sub-menus, including the usual Load and Save, also Swap where you can move to a second work screen. The Size sub-menu brings up a size-screen requester where it is possible to alter the physical size of the work screen to your Amiga's memory limitations.

The Brush menu gives you a choice of four sub-menus while the Palette menu includes CopyColor, ReMap and Undo selections. The Effect pull-down menu allows you to Flip the image both horizontal and vertical and to rotate it in 90 degree increments. The Mode menu contains eleven different drawing modes including RubThru, Blur and Texture Mapping to name just a few. The final pull-down menu is Prefs where you can select the Workbench to be opened or closed, the coordinates to be on or off, and to tell *Digi-Paint* if you have a genlock attached to your system.

Transfer-24

The second disk supplied with the *Digi-Paint 3* package contains a program called *Transfer-24*. This piece of software contains much of the image processing capabilities of NewTek's *Digi-View* program. Adding the Transfer-24 software to *Digi-Paint* gives the user a complete set of painting and image processing tools. If you know how to use the *Digi-View* software you will know how to operate the *Transfer-24* as both interfaces are almost identical. Loading an IFF image into *Transfer* will automatically convert it to the currently selected resolution mode and number of screen colours that the user sets upon startup. The resulting image can then be altered in many different ways via various control utilities.

Digi-Paint 3 is AREXX compatible.

ARexx is a standard for interprocess communications on the Amiga, and *Digi-Paint* can communicate with ARexx. This is important for the "power-user" who likes to program. With this capability you can control *Digi-Paint* completely from other programs you write. Two sample ARexx scripts are included with *Digi-Paint*. You'll be hearing a lot more about ARexx as future Amiga software is released.

The manual

The 130 page spiral-bound soft-cover book is well presented throughout with an ample amount of pictorial information, as well as easy to read and instructive text, BUT (read loudly) NOOO INDEX! A slap on Steve Peterson's and Robert Blackwell's wrists!

Digi-Paint 3 is equal to Microillusion's HAM paint program *Photon Paint 2*. I have to say equal because each program offers utilities and tools that the other does not. There is only one other Amiga HAM paint software package that will out-paint both, and that is *Digi-Paint 4*, but good King NewTek still has his pixel workers burning the midnight electrons on that one.

Basic hardware requirements: *Digi-Paint 3* requires an Amiga with at least 512k of memory and one disk drive running KickStart 1.2 or higher. The recommended configuration is two disk drives and 1 megabyte of memory as some of the features are not available unless your computer has at least 1 meg. The program is compatible with all Amiga models. *Digi-Paint 3* is optimized for the 68020, so it will take advantage of any accelerator card to improve performance.

So what ever happened to *Digi-Paint 2*? "TWO?!" snorted King NewTek! "There never was a TWO! *Photon Paint* has a TWO! We went ONE better ... THREE!"

Available from Computermate (02) 457 8118, RRP $129.00

Dennis Nicholson is the Editor of Graphics-Palette, the graphics/DTV disk-zine for the Amiga.

Platinum Scribble!

According to Eric Holroyd, Scribble Platinum may have finally converted him to the Amiga for good!

AS I'VE SAID before in these pages, I use both a C-128 and and Amiga 1000 in the office for my various jobs and have a couple of favourite word processors on the 128 which I've never found anything to beat on any of my Commodore computers. I've been working with *Platinum Scribble!* for the past three days though and it looks like this is the one that will finally get me to use the A1000 for my writing chores. Basically, my objections to many of the Amiga WPs that I've looked at have been with graphic screen displays (WYSIWYG) which seem to take far too long to update and end up confusing me because I'm typing faster than the words appear on the screen.

Many of the Amiga word processing programs have extremely good features, but if the on-screen speed is too slow then I'm afraid it puts me right off using a particular program.

Such is not the case with *Platinum Scribble!* which is billed as a "text-oriented" word processor "capable of writing everything from letters home and grocery lists to business reports and the Great Novel". You write your material on a normal text screen, then use the Preview option which lets you see the document right there on the screen exactly as it will come off your printer. Boldface, italics, underlining, sub & superscripts and all. This is by far the best way to work, I feel, as you can work quickly, then have the chance to fix up any mistakes before pressing the print button.

I found *Platinum Scribble!* extremely user-friendly with its pull-down menus, point and click operations, and nice little mouse pointers. There are keyboard alternatives (using both Amiga keys) for most of the features offered on the pulldowns which make it a very fast program to use too. Scrolling up and down the text is both fast and smooth, and there are keyboard commands to quickly move the cursor around the screen and go to the start or end of your document. There's no need to remember the commands either as a full list displays if you press F1.

User-friendly manual

● The manual is very user-friendly and lists all the functions and commands as well as explaining everything simply. The whole thing comes in a small three ring binder which will lie flat on the desk. Another plus!

New computer users are taken gently through various stages: First up is a bit about your system and the terminology used in the program. Then there's some good info about copying the master disks, which aren't copy protected so if you have a hard drive you can easily follow the next bit to install *Platinum Scribble!* on that. There's a bit of CLI demystifying and then follows a "Beginner's Tutorial" which is really helpful to absolute beginners.

This is how a manual should be, I think, as too many others that I've seen seem based on the idea that everyone is computer literate. This one doesn't, so take it from me that you'll be able to follow what's going on even if you only bought your Amiga this morning.

I like the way that the mouse pointers give you a feel for the mode that you're in. For instance, to Cut a piece of text for Pasting elsewhere into the document - mouse-selectable from a pull down menu or you may use Right Amiga & X - you get a pointer like a pair of scissors. Move this over the text whilst holding the Left Mouse Button. When you've highlighted all the text to Cut release the button and the text is taken out of the document and held in computer memory.

Select Paste (or use Right Amiga & V) and the pointer changes to a tube of paste. Move this to where you want the text to go and press the Left Mouse Button to recall it from memory and insert it. The Copy function is very similar except that the pointer becomes a camera to let you take a "picture" of the text without erasing it. This lets you have the same piece of information at several places in your document and is very useful. Although this may seem a little juvenile at first it's not really and I found

those little pointers great to work with.

When entering text you're in normal Edit mode and have the option to type in Overwrite or Insert mode. In Overwrite you can simply type over anything else you may have written, whilst in Insert mode the text will open up at the cursor position to accommodate the additions.

Styling text

● The manual talks about "styling text" which is an easy way to dress up your document with Boldface, Italics, Underlining, Sub & Superscripts after you've actually written the piece. Again, the styling functions can be selected by mouse clicks or by keyboard commands. Right Amiga & B turns on the Boldface function and turns the pointer into a little paint roller. Position this at the start of the text you want styled, then hold the Left Mouse Button and move the paint roller over it. Release the button and you'll see your text in Boldface. (Keyboard alternatives: Position the cursor, "anchor" it there by pressing F9 then use the cursor movement keys to highlight the required text. Press Return for it to take effect.)

It works the same with Italics and Underline, and for Subscripts and Superscripts the function stays "active" to let you "Style" just one character. This is very handy when writing chemical formulae which use numbers below the current line of type (subscript) or degrees of heat, for example, which use figures above the current line (superscript).

Of course, many of the Styling attributes may be used together as you may wish to have something in underlined italics with perhaps just one of the italicised words emphasised in Bold for effect. It's easy to do and quite novel to do it all AFTER you've written the document instead of actually whilst writing, as is the case with almost every other Word Processor I've used. An entire document may be styled very quickly by going to the top of it with Alt & Up Arrow then scrolling the paint roller over the whole lot.

The F-Keys all have preset functions and are useful things themselves. For instance, pressing F3 will "Center" the cur-

rent line of text. Very handy for quick titling jobs or chapter headings etc. F4 does a "Quick Save" of the document under the same name. (To save it under a different name use "Save As" from the document menu.) There's no automatically timed save and I found F4 to be the next best thing.

Defaults

● When you boot up the program it comes up with existing default settings such as: Line & Page length - Left, Right, Top and Bottom margins - preset screen colours etc and you have options to change and resave all these for your own use. Incidentally, a press of the HELP key shows instantly what the "defaults" are, also giving you a hand word count at the same time. There are two ways to change the defaults, one by using the pull down menus and typing new values into the requester that comes up, and the other by using a system of "dot commands". These are quite the handiest thing I've come across and I find them most useful. Also known as "embedded commands" because you put them anywhere in the text to take effect immediately.

For instance, if your defaults specify a Line Length of 70 with Left and Right margins of 5 each and you want to have a special paragraph somewhere in the text

with margins of 20 each and a Line Length of 40 you'd simply enter (on a line all by itself):
l=40,lm=20,rm=20
and it would all happen automatically from there on. To return to original defaults you'd enter new "dot commands" to reset the values or you could change to yet other values if you wished. There's a great long list of "dot commands" covering just about everything I could think of. I found all of this quite easy to absorb and work with and after a while I realised that I was working with a combination of mouse clicks, keyboard commands, and "dot" commands with no problems at all.

Also included is a Find and Replace function, where you may have the program search for every occurrence of a particular word then replace it with a new one. Useful when you've written a long report and spelled the chairman's name wrongly at least 50 times. Find and Replace would fix that up in less than one minute all up.

Headers and footers are included of course and use the commercial sign, @, to include the current date and the hash sign, #, to set the page number. Headers and footers are very useful in memo and letter writing and may be put at left, right or centre at your command. Bold-

face and underlining are available too.

Many users would welcome the ease of use of the Mail Merge option. This lets you type a document and mark it with special code marks (the ampersand, &, is used for this) and then build a special data file with the names and addresses of people to whom this document is to go. Imagine a user group secretary sending out 250 invites to a special meeting or a company secretary mailing out 1000 "Change of Address" notes. Easily done by following *Platinum Scribble*'s manual. Mail Merge is operated with "dot" commands (F2 displays a complete list of them) and is quite simple to use. Simply embed the ampersand code with:
ar &NAME&,d
the software will put in the NAME for you from the datafile you've built up.

Platinum Scribble! document has its own format details saved along with it so if you've been working with Tabs to set up a columnar document you'll be happy to know that the tab settings will be intact when you reload the document later for more work. This applies to all other format settings such as screen colors, page length, margins etc.

Spellchecker and thesaurus

● There's a very good Spell Checker (104,000 + words) and Thesaurus (470,000

+ words) built into *Platinum Scribble!* and if you have enough RAM - I have 1.5 mb and still had around 77,000 free memory showing when I did this - it's best to load them into RAM.

There are two ways you can do this. One is fully documented in the manual and involves Editing the startup-sequence to do it all for you automatically. The other is to click onto the icon of the Supplements disk, then click the Dictionary to Ram icon. Then click the program disk icon and the *Scribble!* icon to load the program itself. I found this so easy to do that I haven't yet done the Editing job to do it automatically. I may never get around to doing that.

Again, keyboard commands or pull-down menus let you access Spelling or Thesaurus. You may spell check the whole document or just what's showing in the window on screen. You may even have the program check your spelling as you write, in which case the screen will flash and you'll hear a "beep" if you type a word wrong. This one is VERY handy for a typist in a hurry. If you're not sure about a particular word you can have the program "Guess" it for you, whereupon you'll be given a list of words that approximate the spelling you've guessed at. Highlighting one and clicking the mouse substitutes it in your text.

I do like the Thesaurus a lot as I find myself stuck for words on occasion (believe it or not!) and when I've used the same word a dozen times it's nice to be able to call up a list of words with similar meanings and do the highlight and click trick to substitute one of them into my piece. The Thesaurus will give a definition to the word you highlight when it brings up a list of similar words and its requester has Next and Prev boxes for you to click onto. These bring up the Next or Previous definition of the word, as quite often a word has wildly-differing meanings. Many of the words in *Platinum Scribble*'s Thesaurus have well-explained multiple meanings so my Next and Prev boxes have been well used already.

Putting in graphics.

● Many word processors are capable of inserting graphics into the text and *Platinum Scribble!* is no exception. It does it rather differently though, and I was quite intrigued with its modus operandi. Graphics are inserted by using the "dot" command ".IP" (Insert Picture) typical

command line would be:
.IP=Picturename.IFF,1.00,4.00,2.8,4

This formidable-looking command (it's not really) has the "dot" command itself followed by the equals sign and the filename to be loaded from disk. This filename may be preceded by a drive and path name if necessary, such as "df1:Pics/Picturename.IFF".

The remaining four "arguments" or sets of figures are merely where you want the picture to go. 1.00 is the Left Margin, 4.00 is the width of the picture, 2.8 is the height of the picture (these three are all in inches), whilst the last figure is the density setting used by your printer. Check what's showing for this in your Graphic2 screen in your preferences if you're in doubt, or look it up in the AmigaDOS 1.3 Enhancement Guide. It's not difficult at all, and it's certainly very flexible.

Printing

● A word about printers: in the unlikely event that your printer isn't supported by AmigaDOS Preferences there are special provisions in *Platinum Scribble!* to allow you to bypass AmigaDOS printer drivers. You can use the printer variables in your printer's manual to set up your own printer control values and send the data to the logical device PAR: (or SER: if that's what your printer uses). What this means is that you won't be able to use the onscreen Styling attributes but will use "embedded" commands via the "Print GO" function. Once again, it's explained clearly enough.

Supplements disk

● There's a Verify program on the Supplements disk that lets you check that copies you've made of the master disks are good copies (I've never seen this one before but it's very nice), plus a really useful editor known as Spellmate which lets you add, delete, or otherwise edit words unique to your own situation in the User Dictionary

The other program on the Supplements disk is RAM to Dictionary, and you should use this if you've been working with the Dictionary in RAM, after you've quit *Platinum Scribble!* but before you switch the computer off. This will resave the dictionary to disk with all the new words you've added to the User Dictionary in that session.

Platinum Scribble! uses a powerful feature in the Preferences File pull down menu whereby you select how your file is to be formatted before being saved to disk. Normal Amiga text file format uses a line feed only at the end of each line and the program is set to default to that setting. However, if you want to upload your file to an electronic bulletin board you'll probably need to have a Carriage Return AND linefeed at the end of each line, and perhaps for some other reason you may need a Carriage Return only. This setting is stored with the document's format file and the program checks for that before loading it from disk so as to display it properly.

I've only been using the program for three days, but I'm already convinced of its value and can recommend it highly to Amiga users for almost any professional word processing job they can think of. I say "almost" because about the only thing I haven't been able to find yet in *Platinum Scribble!* is PostScript support for those really high end laser printer users.

Compatible programs

● *Platinum Scribble!* is produced by the USA company, Micro-Systems Software Inc. They seem to specialize in making easy-to-use business class software which will be useful to the home computer user as well as to the power business user. Currently, their other programs include *Platinum Organise!* (an excellent databasing program, fully compatible with *Platinum Scribble!* RRP $79), *Platinum Analyze!* (a good spreadsheet program fully compatible with both the previous two. RRP $119), *Platinum OnLine!* (a complete terminal program to send your Platinum and other files by modem. RRP $119) and *Excellence!* which is a "high end of the market" full-featured word processor with bells and whistles galore, RRP $299. ALL of these programs, except *Excellence!* of course, are available in one package known as *The Works! Platinum Edition* carrying a RRP of $279 which is quite a saving on separate purchases. ❑

Platinum Scribble review copy from Computermate Products (02)457-8118. RRP $99.

All above prices quoted by this distributor as at 1st December 89.

Caring for your sick 1541
with Drive Doctor

by Eric Holroyd

THE COMMODORE 1541 is a fine disk drive, as most 64ers know. It's sturdy and reliable but like all precision equipment, it does need a tune-up service now and then.

Computer "data" is read from your floppy disks by the Read/Write head which moves back and forth over the various tracks on the disk surface courtesy of the Stepper Motor. After many hours of use the Read/Write head may become "misaligned" to the point where the drive will read disks formatted by it itself, but won't read commercial software disks. It's then that you need to get the drive re-aligned to bring it back up to peak performance.

There are many excellent technicians and workshops where you may take your drive for this job, or if you have some basic skills you may be able to do it yourself using the *Drive Doctor* package produced by Trilogic.

If your drive is out of alignment it stands to reason that any checking program supplied on disk may or may not be able to load properly. The *Drive Doctor* comes on a cassette in view of that fact, so you'll need to dig out and dust off the cassette unit to load in the various diagnostic programs.

You'll then be able to perform five separate tests: alignment, motor speed, head movement, motor hysteresis, and back-stop setting. If the drive passes all these tests OK then an electronic fault is likely.

The alignment check uses a specially formatted disk which is included in the *Drive Doctor* package and the on-screen display shows the degree of alignment. If it shows that the drive is out of alignment then you're able to perform quite accurate adjustments by following the instructions in the program's manual. Everything is shown quite clearly in the diagrams and there are lots of little tips about what to look for. The diagnostic check is said to be accurate to within a half track, which is as close as you can expect to get, given the drive design.

Checking motor speed is easy and uses a blank disk to perform various steps. If the speed varies at all it could be any one of a number of causes, all of which are pointed out in the manual.

You're then shown how to fix each item very simply. Older copy-protected Commodore software used an "error check" system which had the effect of "rattling the head" to make a most disconcerting noise. Thankfully that type of protection isn't used much any more, but you'll hear the same noise if you have a disk error or the program can't find the data on the disk on occasion. The rattling is caused by the Read/Write head banging up against the Back Stop. This item is shown in diagram and it needs to be in a certain position relative to the Read/Write head or the drive won't function properly. If the diagnostic check shows this positioning to be out then you again follow the simple instructions to fix it.

Similarly, checking the head movement and stepper motor hysteresis is easy to do and adjustment procedures etc are explained. Hysteresis means that the head should move back to the same position after each diagnostic check moves it. If it doesn't then either the pulley may be loose or the drive band may need attention. In the latter case the manual says that it's possible to re-tension this slightly by shortening the spring. If it's too far gone you'll need to get workshop attention for it.

That's pretty much the case with all of the technical stuff covered here. There are some things you can do for yourself and other things need specialist attention. If you use the *Drive Doctor* regularly you'll be able to keep your drives in tip top condition and will know just when to take it in for its major service.

All in all I found this to be a worthwhile set of programs and any C-64 user able to use simple tools and follow instructions should have no trouble in using the diagnostics. ❑

Review copy from HPD (08)252-3300,for 1541 and 1571 drives. RRP $32.95.

Animagic -

The Animation Editor and Special Effects Generator

by Dennis Nicholson

Just imagine if Cecil B. DeMille had an Amiga when he was producing The Ten Commandments. "Thou shalt make many special effects, thou shalt show me lots of animations, and thou shalt use Aegis software!" Well, move over, Hollywood! Here comes Cecil B. DeMille Junior. Aegis' latest foray into the world of powerful animation software is worthy of an Academy award.

ANIMAGIC (PRONOUNCED ANIM-AGIC) is sold under the Aegis Development banner (creators of *VideoScape 3D, Lights, Camera, Action!* and *Modeler 3D*). The program, all 422k of it, is an extremely powerful piece of software, but at the same time is deceptively simple to operate. Animagic, as the name implies, allows you to work with Anim image files, and before I go any further I should explain just what an Anim file is to the uninitiated amongst you.

The ANIM format allows storage and fast playback of sequences of frames using the minimum amount of disk space possible. It was first developed by Gary Bonham at Sparta Inc in California shortly after the Amiga was launched. (An interesting titbit regarding Sparta is that the software company was heavily involved with the early stages of President Reagan's Star Wars defence program. I wonder if they were using Amigas!?)

How Animagic began
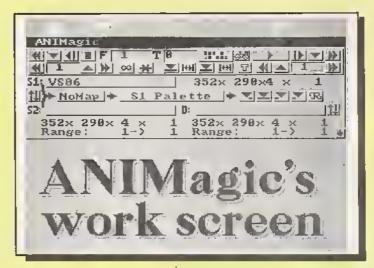
Gary states that *Animagic* began its life as an Anim editing program. He found that it was difficult to capture a large animation without missing some of the vital frames. He needed a tool that allowed him to do edits on existing Anim files.

When a series of IFF pictures are recorded as an Anim file they are saved in the following way.

Let us imagine you have created a series of 20 pictures in a paint program and wish to convert them into an animation. (This can be easily achieved with such programs as *Deluxe-Paint III* using its animation facilities).

When the final production is saved to disk as an Anim file

ANIMagic's work screen
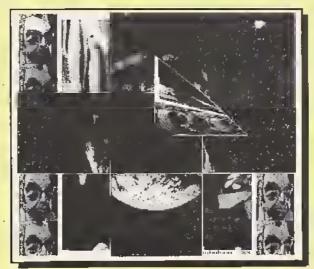
the very first picture in the series of images is always saved as a standard IFF picture. The next frame is then compared with frame one and ONLY the changes between the FIRST and SECOND picture are actually saved. The THIRD is compared to the SECOND and its differences are saved, and so on down the line until the 20 pictures have been read, compared and saved. The more changes that occur from one picture to the next, the larger the resulting Anim file will be, as it has to store more image information. The screen resolution you are using and the number of colours used for the original pictures also affects the final size of an Anim file.
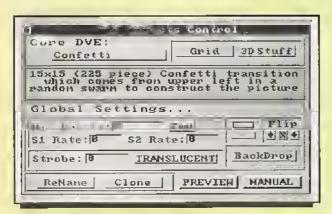
The Anim format has fast become a standard in Amiga animation circles (it is even endorsed by Commodore) and it is used by several other graphics software packages such as *Videoscape 3D*, *Video Titler*, *Lights! Camera! Action!*, *Modeler 3D*, *DeluxePaint III*, *The Director*, *Photon Cel Animator* and the Animation series of software produced by Hash Inc.

Myriad of functions

The *Animagic* program allows you to perform a myriad of functions on both Anim and IFF image files. It is possible to

```
          ...s Control
 Core DVE:
   Confetti                 Grid    3D Stuff

 15x15 (225 piece) Confetti transition
   which comes from upper left in a
 random swarm to construct the picture

 Global Settings...
                           Fini        Flip
 S1 Rate:0     S2 Rate:0

 Strobe:0         TRANSLUCENT   BackDrop

   ReName    Clone     PREVIEW  MANUAL
```

merge separate Anims to create longer ones. Crop animations to any screen size. Create transitions between Anims and record the end result. Adjust colours within a single frame of an Anim, or overall. Optimize colour palettes or create a new custom palette. Save any frame of an Anim as an IFF image. Layer Anims on top of one another utilizing varying amounts of transparency. Intermix resolutions. Alter timing speeds and even cut and paste Anim files.

But this is just the tip of the visual iceberg! The program allows you to add complex picture manipulation effects, more commonly known as DVEs (Digital Video Effects). This unique function of *Animagic* can turn your Amiga into a VERY powerful graphics tool capable of creating visual effects only possible with video hardware costing tens of thousands of dollars.

The DVE feature easily lets you make an animation or IFF image do anything from a simple "fly-in" effect to much more complex effects such as "page turns" or "shatters" (breaking up of the screen image into many pieces). Effects can be reversed, mirrored, strobed, drop shadowed, cycled, bordered and even previewed as a wire frame image, and there are a myriad of others.
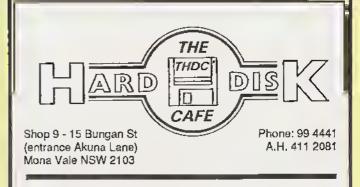
The DVE effects supplied with the program number 23 different types, but each DVE is capable of a MINIMUM OF 9,025 VARIATIONS! No, that is not a typing error! There are 207,575 different video effects possible using *Animagic*! It is even possible to create and save your own DVEs, thus giving you even more special effects. Now for a software program costing $Aus149.95 that has to be value for money!

Worth the wait

Altering pre-made Anims within the program is no difficult process, but if you start to add any DVEs to your creations be prepared to wait around for a long while. This is no fault of the program, but really depends upon the length and size of your Anim file(s).

For example, if you have an animation file that is 100 frames in length and you wish to add a "shattering" effect to it that you want to last for 50 of the 100 frames, then you may be waiting all day or all night (or both) for the end result.

To obtain the above example you would load your
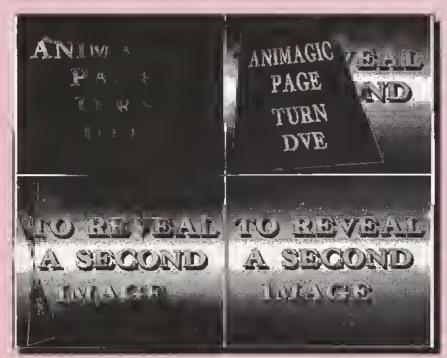
cursor at any of the work screen requester buttons and hitting the help key on the keyboard, you are presented with a text description of what the particular item does. This saves time hunting through the manual looking for answers to forgotten commands.

If you intend to purchase *Animagic* for some serious DTV (Desk Top Video) work, you should be made aware that you will need a serious computer. By that I mean you really NEED at least 2 megs of memory, a hard drive and a turbo board to make full use of the program ... 8megs would be better! "Ready when you are, C.B!"

Basic hardware requirements: Amiga 500,1000, 2000 etc. 1 meg of RAM - 2 meg recommended. One disk drive - a second floppy drive and/or hard drive preferred.

InTouch Tutorials (02) 954 3730 RRP$119

Dennis Nicholson is the Editor of Graphics-Palette, the graphics/DTV disk-zine for the Amiga.

ready-made Anim file into *Animagic*, then load the "Shatter-DVE", tell the program that you want the effect to begin at frame 1 and end at frame 50, then click on the Record button. A new Anim is created that copies the first, but with the added shatter effect. Each new frame is drawn one at a time on the screen as the effect progresses, and this is where the time is taken up. EACH frame is drawn down the screen ONE SCAN-LINE at a time until it is completed, then the next frame is drawn ONE SCAN-LINE at a time until it is completed, then the next is drawn ONE SCAN-LINE at a time until it is completed. I think you get the picture ... however slow it may be! But believe me, it is worth the wait!

Aegis have had the sense to include a 68020/68881 turbo version of the program with the *Animagic* package for folks lucky enough to have a turbo board installed in their machines. This sure does take the pain out of creation, It actually speeds things up by about 300%!

Animagic comes as a two-disk package. The second disk contains the turbo 68020/68881 version as well as several demo Anims, pictures and the like. The program supports

all Amiga resolutions and colour modes, HAM, HalfBrite, NTSC and PAL, interlace and medium or severe overscan.

A built-in bonus to the software is its on-screen help commands. By simply pointing the

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Disk Editing

by David Williams

How many times have you scratched a program from a disk, and then realised that it was the wrong one? Or you later changed your mind, but had no backup copy? There was nothing that could be done – unless you had a disk editor.

A LITTLE UNDERSTANDING of how information is stored on a disk will enable you to restore scratched programs, and make numerous other changes to files on disk, even directories. However, before you start playing around with the contents of a disk, it is important that you do know how the information is stored. If you do not, and you start writing sectors to disk, then you can sure say goodbye to it!

In order to appreciate this article, a disk editor is needed. There are many available commercially, but the one I use is "80-Column Disk Sector Editor" which was published in *Compute!'s Gazette*, number 50. *(Our own disk magazine contains and excellent editor on Suite 64 disk number 13 – Ed.)*

You are, no doubt, aware that when you buy a disk it is completely blank, and must be formatted before the computer/disk drive can make use of it. This process, on Commodore computers, divides the disk into a number of rings called tracks.

The 1541 and 1571 both divide the disk into 35 tracks. (Only on one side on the 1541. A 1571 divides the second side into another 35 tracks, and both sides can be read from the one directory.) These tracks are then subdivided into a number of equal segments known as sectors (or blocks, on the disk directory, that is, one block equals one sector). The number of sectors differs from track to track because there is a decreasing amount of space between the track furthest to the edge of the disk, and the track closest to the centre. (See table 1) There is a total of 664 blocks on a 1541 formatted disk, and 1328 (664 times two sides) on a 1571 disk.

Track 18 is used to keep all the information for the directory. This is because when the disk drive is searching for a file in the directory it then only has to jump a maximum of 17 tracks in either direction to get to the file. The first sector (sector zero) of track 18 holds the BAM (Block Availability Map) which keeps a record of which sectors (or blocks) have been used. Every time you save or erase a file on disk, the BAM is updated. (See table 2)

The sectors from one onwards hold information relating to any file that has been put onto the disk. (See tables 3 and 4)

As you can see, the first byte in a directory entry is used to hold information about the type of file. Bits 0-2 tell us which of the 5 file types we are looking at. Bit 6 tells the drive if the program is protected (the bit=1 and a < follows its filetype in the directory), which stops it being erased by normal means, or not (the bit=0). Bit 7 tells if the file is closed (0) or not (1). An open file (with an * after its filetype in the directory) should not be accessed.

When you scratch a file, a number of changes are made to the disk directory. The tracks and sectors that it occupied are marked as being free in the BAM, and its filetype becomes a 0. The file however, is not actually lost, as will be shown later. Although not required so as to understand this article, the way that the different types of files are stored on disk can be found in tables 5, 6 and 7. This will allow you to trace your way through any type of file.

And now, some brief hands-on experience. First, get a disk with nothing on it. Type the following on a Commodore 64:

open 1,8,15,"n:test,xx":close 15

Or, for a Commodore 128:
header "test,xx" to format it, with the name 'test' and the id 'xx'.

Now, save a program onto the disk. The following will do:

```
10 print "[shift/clr]":def fn s(a)=int(rnd
(1)*1000)
20 s=1024:d=54272:c=s+d
30 for x=1to 50:f=fn s(x)
40 for y=1to 2:for r=1to 4:read a,b
50 poke s+f,a:poke c+f,b
60 next :restore :next :next
70 data 86,1,91,5,42,7,46,1
```

Now load your disk editor. Examine the contents of track 18, sector 0. If you look at bytes 144 to 161, you will see the name of the disk. Now, using your editors' particular commands, change "test" to "commodore" (don't worry about the fact that you are changing it to a longer name. A disk can have a name with a maximum of 16 characters) and write the sector to disk. This will make the change permanent. You have just renamed the disk. Easy, wasn't it?

Okay, now scratch the program that you saved. Done that? It can no longer be loaded – but look at track 18, sector 1. The name is still there! Move the cursor to the first byte (byte 0) of its directory entry (the name starts at byte 3, remember, so go 3 bytes before it). This should be a 0, representing a deleted file. Change this to $82, ie: a program file, and write the sector to disk. (Note that the $ denotes a hexadecimal number. In decimal, $82 is 130, which is made from 128 + 2.) The program can now be loaded, but if you save something to disk at this point, it may be overwritten. This is because the BAM believes that the blocks our newly resurrected file took up are still free for use after being scratched, even though they aren't. So, you must validate the disk. This process involves the disk drive throwing out the BAM, and rewriting it, by going through every single file on the disk. And now the program is healed!

After using a disk editor on a disk it is usually a good idea to validate it. This

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Table 1

does not apply, however, to disks with files that have not been closed, but you wish to keep, or GEOS disks. This is because any unclosed files will be removed when the disk is validated, and because GEOS stores its information in a different way than normal Commodore disks, so validating one will render it unusable. Only validate GEOS disks from the 'Disk' menu on the Desktop.

Another use of disk editors is that individual bytes of a file can be changed. I have a word processor document that takes up 153 blocks. Say I was looking through the disk with my editor, and noticed two transposed letters in a word. I could fix that there and then in a couple of seconds, but normally I would have to load my word processor, load the document, search for the error, correct it, then save the thing again.

Also, if you have written a program on disk and want to sell it, it is in your interests to prevent people copying your program. So, you could use an editor to write a word or message or something on a disk, and then mark that block in the BAM as being used. To use this, just put something such as the following at the start of your program.

```
10 open 1,8,15
20 open 5,8,5,"#"
30 print# 1,"b-r:"5;0;1;1
40 b$=""
50 for l=0to 255
60 get# 5,a$
70 b$=b$+a$
80 next:close 1:close 5
90 if b$<>"...."then print "access
denied!":new
```

--- Table 3 ----
Directory File Format -- Track 18, Sectors 1-19

Byte	Definition
0,1	Track and Sector of next DIR block
2-31	File Entry
134-63	File Entry
266-95	File Entry
398-127	File Entry
4130-159	File Entry
5162-191	File Entry
6194-223	File Entry
7226-255	File Entry 8

	SINGLE SIDED	DOUBLE SIDED
Number of tracks per diskette	35	70
Number of blocks per diskette	683	1366
Number of blocks reserved (BAM/DIR)	19	38
Number of blocks available to user	664	1328

1571 SECTOR DISTRIBUTION

TRACK NUMBER	SECTOR NUMBER	SINGLE SIDED	DOUBLE SIDED
1 to 17	0 through 20	21	21
18 to 24	0 through 18	19	19
25 to 30	0 through 17	18	18
31 to 35	0 through 16	17	17
36 to 52	0 through 20		21
53 to 59	0 through 18		19
60 to 65	0 through 17		18
66 to 70	0 through 16		17

Table 2

```
                    1571  BAM
        ( Block Availability Map, Track 18,Sector 0)
```

BYTES	CONTENTS	DEFINITION
0	18	Pointer to the track of the next directory entry.
1	01	Pointer to the sector of the next directory entry.
2	65	ASCII character A indicating 1541 format.
3		Flag, double-sided disk $80 = double-sided. $00 = Single-sided.
4 - 143		Block Availability Map
221 - 237		Block Availability Map
238		Usable SECTORS TRACK 53=0 SECTORS ARE PRE-ALLOCATED.
239 - 255		Block Availability map

```
            Track  53,   Sector  0
```

0 - 104		BAM for tracks 36 thru 70.
105 - 255	00	Unused

```
        1571  DIRECTORY  HEADER
```

	Track 18,	Sector 0
BYTES	CONTENTS	ACTION
144-159		Diskette name padded with shifted spaces.
160-161	160	Shifted spaces.
162-163		Diskette ID
164	160	Shifted space.
165-166	50/65	DOS version/format type.
167-170	160	Shifted spaces.
171-220	00	Unused.

--- Table 4 ----
Structure of each Directory entry

Byte	Contents	Definition
0	128+type	File type OR'ed with $80 to indicate closed file
		File type OR'ed with $c0 to indicate locked file

Type :

0 =	DELeted	
1 =	SEQuential	
2 =	PRoGram	
3 =	USeR	
4 =	RELative	
1-2	Track and Sector of first block in file	
3-18	File name padded with shifted spaces	
19-20	REL file only. Track & Sector of first side sector.	
21	REL file only. Record length	
22-25	Unused	
26-27	Track and sector of replacement during SAVE@	
28-29	Number of blocks in file, lo-byte hi-byte	

FILE TYPE	DIRECTORY APPEARS	HEX	ASCII
Scratched	not shown	$00	0
Deleted (DEL)	DEL	$80	128
Sequential (SEQ)	SEQ	$81	129
Program (PRG)	PRG	$82	130
User (USR)	USR	$83	131
Relative (REL)	REL	$84	132
Open DEL	not shown	$00	0
Open SEQ	*SEQ	$01	1
Open PRG	*PRG	$02	2
Open USR	*USR	$03	3
Open REL	not apply	$04	4
DEL @ replacement	DEL	$A0	160
SEQ @ replacement	SEQ	$A1	161
PRG @ replacement	PRG	$A2	162
USR @ replacement		$A3	163
REL @ replacement	not apply	$A4	164
Locked DEL	DEL<	$C0	192
Locked SEQ	SEQ<	$C1	193
Locked PRG	PRG<	$C2	194
Locked USR	USR<	$C3	195
Locked REL	REL<	$C4	196

What this does is read the entire contents of track 1, sector 1 into the variable b$, using the disk drives block-read command. In line 90, b$ is compared to some fixed string (put it where the .... is). If it does not match then the "access denied" message is printed, and the program is erased from memory. Just modify this skeleton to suit your needs. And that's that!

What you should do now is muck around with a disk full of programs (unless you know what you are doing, make a backup!!!).

Disk editing can allow you to do many useful things, and you never know what you may find on commercial disks! Did you know that the world records of *World Games* are stored on track 16, sector 12, for instance? ❑

- Table 5 -

```
PROGRAM (PRG) FILE FORMAT

┌──────────────────────────────────────────────────┐
│ BYTE          DEFINITION                          │
├──────────────────────────────────────────────────┤
│ SECTOR 1                                          │
│ 0,1      Track and sector of next block in file 1.│
│ 2,3      Load address of the program              │
│ 4-255    Program information as in memory.        │
├──────────────────────────────────────────────────┤
│ REMAINING SECTORS                                 │
│ 0,1      Track and sector of next block in file 1.│
│ 2-255    Program information as in memory.        │
├──────────────────────────────────────────────────┤
│ LAST SECTOR                                       │
│ 0,1      Null-followed by # of data bytes in sector│
│ 2-??     Last bytes of information as in memory.  │
│          End of file is marked by 3 zero bytes.   │
└──────────────────────────────────────────────────┘

SEQUENTIAL (SEQ) FILE FORMAT

┌──────────────────────────────────────────────────┐
│ BYTE          DEFINITION                          │
├──────────────────────────────────────────────────┤
│ ALL EXCEPT LAST SECTOR                            │
│ 0,1      Track and sector of next SEQ data block. │
│ 2-255    254 bytes of data.                       │
├──────────────────────────────────────────────────┤
│ LAST SECTOR                                       │
│ 0,1      Null-followed by # of data bytes in sector│
│ 2-??     Last bytes of data.                      │
└──────────────────────────────────────────────────┘
```

```
RELATIVE (REL) FILE FORMAT

┌──────────────────────────────────────────────────┐
│ BYTE          DEFINITION                          │
├──────────────────────────────────────────────────┤
│ DATA BLOCK                                        │
│ 0,1      Track and sector of next data block.     │
│ 2-255    254 bytes of data. The first byte of an  │
│          unused record contains $FF followed by   │
│          $00 to the end of record. Partial records│
│          are completed with zeros.                │
└──────────────────────────────────────────────────┘

RELATIVE FILE. SIDE SECTOR FORMAT

┌──────────────────────────────────────────────────┐
│ 0,1      Track and sector of next side sector block│
│ 2        Side sector number (0-5).                │
│ 3        Record length.                           │
│ 4-5      Track & sector pointer of first (#0) side │
│          sector.                                  │
│ 6-7      Track & sector pointer of second (#1) side│
│          sector.                                  │
│ 8-9      Track & sector pointer of third (#2) side │
│          sector.                                  │
│ 10-11    Track & sector pointer of fourth (#3) side│
│          sector.                                  │
│ 12-13    Track & sector pointer of fifth (#4) side │
│          sector.                                  │
│ 14-15    Track & sector pointer of sixth (#5) side │
│          sector.                                  │
│ 16-255   Track & sector pointers to 120 data blocks│
└──────────────────────────────────────────────────┘
```

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3D Graphmaker for the C64

by Graham Winterflood

If you have a requirement to produce professional looking graphs for school projects or for the office, then this low budget program may be just the answer.

APART FROM THE cost of buying this issue of the magazine, the only other investment will be the time it takes to type the program in, as it is a moderately long one. However it is certainly cheaper than investing in a commercial program to do the same job. Equipment required is a Commodore 64 and disk drive, and if you want hard copies of your graphs, a printer is necessary.

Now for a description of the program. Up to 60 items of numerical data may be entered and the results are graphed as three dimensional vertical bars. Only twelve bars are displayed on each page, so if there is more data subsequent pages are displayed at the touch of a key. A screen dump of each page can be obtained by pressing 'P' to print the graph. The vertical scale of your graph is selected before you first begin, but it may be changed at any time by re-formatting.

Suppose you are graphing numbers up to 1000 but find you now have an item of data up to 1200. By changing the upper limit to say 1500, the vertical scale is automatically adjusted and you will be able to enter data up to a value of 1500. If you try to enter data in excess of the maximum value you will be advised that it is outside the range, and a reformat will be necessary. Once all the data is entered it may be saved as a file on disk, then subsequently re-loaded and changed or added to as necessary. Type in and save the program.

The REM statements may be omitted if desired, they are there for guidance only. Take note of the REM statements referring to spaces, these are important. Graphic symbols have been avoided for ease of going to print and CHR$() symbols have been substituted.

When the program is first run there is a five second delay while machine code data is being read into memory for the screen dump. If you have made an error typing the data statements a checksum will end the program at this point and advise of an error.

Check your typing and resave the program. The checksum may be deleted once the program is running correctly. This section has been written in machine code to speed up the action, because although a screen dump is possible in BASIC it takes too long.

Main menu

The main menu is then displayed. To begin a new graph select item one from the menu. You will be prompted to enter a name for the graph, for example 'SALES'. This will be displayed at the top of each page. The next item to enter will be 'VALUE OF UPPER LIMIT'. This will depend on the data you intend to graph but could be as low as five or as high as many millions.

The program will adjust the relative size of the bar graph to fit on the screen. Once you have decided on the upper limit, you are ready to enter data up to the 60 item maximum. When all items are entered type an asterisk '*' to end the input and return to the menu. The data may then be graphed by selecting eight from the menu. The presentation of the data on screen is in the form of three dimensional bars with a vertical scale in proportion at the left side and the numbers from one to 60 along the bottom in pages of twelve.

This data may be added to at any time by selecting item four from the menu and inputting extra values. Enter the '*' to complete further input. To change a prior entry, select item five. You will then have to enter the number of the bar you wish to change. Enter the

new value when prompted. Item six on the menu is the format change as discussed earlier.

If you attempt to format the vertical scale to a value less than the value of any bar which has already been graphed, you will receive a message showing the minimum value which may be entered. This is designed to prevent a bar graph being larger than the screen will allow. Item seven lists the numeric value of each bar giving the lowest and highest values found as well as the average of all the values. Pressing 'P' while this information is on screen will result in a screen dump to the printer.

When you wish to save the graph file you will be given the option of replacing the old file. If you want to replace it hit 'Y' otherwise hit 'N' and type in a new filename. Remember, you cannot have two files of the same name on disk at once. By typing in a new filename your old copy is retained.

Tips

Now for a couple of other tips. If you have more than one page of data either in graph mode or numeric data mode and you do not wish to page through the rest, hit the space bar to return immediately to the main menu. If you wish to begin a new graph but already have some data in memory, you will have to quit the program and re-run it. In this case the delay at the beginning of the program will be less as it checks to see if the screen dump data has already been loaded.

If a zero value is input as an item of data, no bar will be graphed in that position. The program is not designed to handle negative values. If you would prefer the first two letters of each month at the bottom of the screen instead of the numbers from one to twelve, then change LB$(1) and LC$(1) in the initialization section of the program to read the first and second letters of each month respectively.

I am sure you will find all the typing worthwhile, happy graphing. ☐

C64 3D Graphmaker

```
1 rem------------------------------
--
2 rem
3 rem          c64 3d graphmaker
4 rem
5 rem          by graham winterflood
6 rem
7 rem------------------------------
--
8 rem
9 rem----------initialization---------
10 printchr$(147):print"        pleas
e wait-loading data"
20 ifpeek(49681)+peek(49682)=210the
n70
30 for x=49681 to 49992
40 read a:pokex,a:ch=ch+a
50 next
60 if ch<>39528 thenprint"error in
data statements":end
70 dimg(61)
80 for x=1to28:l2$=l2$+chr$(163):ne
xt
90 br$=chr$(18)+chr$(160)+chr$(146)
+chr$(170)
100 for x=1to9:l3$=l3$+chr$(32):nex
t
110 l3$=l3$+chr$(170)+l2$
120 rem-one space between each numb
er
122 rem     (except line 140)
130 lb$(1)="1 2 3 4 5 6 7 8 9 1 1 1
"
140 lc$(1)="            0 1 2
"
150 lb$(2)="1 1 1 1 1 1 2 2 2 2 2
"
160 lc$(2)="3 4 5 6 7 8 9 0 1 2 3 4
"
170 lb$(3)="2 2 2 2 2 3 3 3 3 3 3
"
180 lc$(3)="5 6 7 8 9 0 1 2 3 4 5 6
"
190 lb$(4)="3 3 3 4 4 4 4 4 4 4 4
"
200 lc$(4)="7 8 9 0 1 2 3 4 5 6 7 8
"
210 lb$(5)="4 5 5 5 5 5 5 5 5 5 6
"
220 lc$(5)="9 0 1 2 3 4 5 6 7 8 9 0
"
230 rem--------------menu------------
```

```
240 poke53280,6:poke53281,12:printc
hr$(147):poke646,0
250 co=7:ro=2:gosub1370:print"*** c
om 64 3d graph menu ***"
260 print:print:printtab(9)"1 - beg
in new graph file
270 print:printtab(9)"2 - load file
 from disc
280 print:printtab(9)"3 - save file
 to disc
290 print:printtab(9)"4 - add to pr
ior data
300 print:printtab(9)"5 - change pr
ior entry
310 print:printtab(9)"6 - format ch
ange
320 print:printtab(9)"7 - numeric d
ata
330 print:printtab(9)"8 - graph
340 print:printtab(9)"9 - quit
350 gosub390
360 a=val(a$):ifa<1ora>9then240
370 onagosub430,810,630,1490,1140,1
220,970,1530,410
380 goto240
390 geta$:ifa$=""then390
400 return
410 end
420 rem-----------begin new graph----
----
430 ifn>0thenreturn
440 printchr$(147):co=2:ro=1:gosub1
370
450 print"name of graph: ";:inputt$
460 print:printtab(2)"value of uppe
r limit: ";:inputb$
470 ul=val(b$)
480 sr=ul/20:dv=ul/5
490 n=1:print:printtab(2)chr$(31)"i
nput up to 60 values"
500 print:printtab(2)"type * to e
nd input"
510 co=2:ro=17:gosub1370
520 printchr$(5)"range of graph is"
l1"to"ul:chr$(144)
530 co=2:ro=20:gosub1370
540 print"value for bar #";n;"
       ";:rem twelve spaces
550 co=20:ro=20:gosub1370:inputb$:g
(n)=val(b$)
560 ifb$="*"thenreturn
570 gn=g(n)
580 ifgn<0orgn>ulthenco=2:ro=20:gos
ub1370:gosub1340:goto530
590 n=n+1
600 ifn=61thenreturn
```

```
610 goto530
620 rem--------------save---------------
---
630 printchr$(147):print:print:prin
t"do you wish to replace: "t$
640 print:print":y/n/":print
650 gosub390
660 ifa$="y"then690
670 a$="":input"new graph title:";a
$:ifa$=""thenreturn
680 t$=a$
690 open15,8,15:print#15,"s0:"+t$
700 print:print"saving: "t$
710 open2,8,2,t$+",s,w"
720 print#2,ul
730 print#2,t$
740 print#2,n
750 for x=1ton
760 print#2,g(x)
770 next
780 close2:close15
790 return
800 rem--------------load-----------------
---
810 printchr$(147)
820 print:input"graph title";t$
830 open2,8,2,"0:"+t$+",s,r"
840 open15,8,15:input#15,e,er$,b,c:
ife<20then870
850 print:print"file not found, try
 again!":for x=1to2000:next:close2:
close15
860 goto920
870 input#2,ul
880 input#2,t$
890 input#2,n
900 forx=1ton
910 input#2,g(x)
920 next
930 sr=ul/20:dv=ul/5
940 close2:close15
950 return
960 rem--------------numeric data--------
---
970 printchr$(147):printtab(20-int(
len(t$)/2))t$
980 tt=0:lo=999999:l(i)=0
990 for x=1ton-1:tt=tt+g(x):ifg(x)<
lothenlo=g(x)
1000 ifg(x)>h1thenh1=g(x)
1010 printtab(2)"bar "x;tab(30-len(s
tr$(int(g(x))))/)g(x)
1020 ifx=15orx=30orx=45thengosub108
0
1030 next
1040 print:print"end of file"
```

```
1050 print:print"high value was   "h
1
1060 print"low value was    "lo
1070 print"average value=   ";int((1
00*tt/(n-1))+.5)/100
1080 co=8:ro=24:gosub1370:print"pre
ss return to continue";
1090 gosub390
1100 ifa$=chr$(32)thenx=n-1
1104 ifa$="p"thengosub1420
1110 printchr$(147)
1120 return
1130 rem--------change prior entry-
----
1140 printchr$(147):print
1150 printtab(2)"which entry #:   ";
:inputb$:x=val(b$)
1160 print:printtab(2)"entry # ";x;
"is now"g(x)
1170 print:printtab(2)"enter new va
lue :   ";:inputb$:gn=val(b$)
1180 ifgn<0orgn>ulthenco=2:ro=20:go
sub1370:gosub1340:goto1170
1190 g(x)=gn
1200 return
1210 rem----------format change------
---
1220 ma=0
1230 forx=1ton-1
1240 ifg(x)>mathenma=g(x)
1260 next
1270 printchr$(147):co=2:ro=6:gosub
1370
1280 print:printtab(2)"value of upp
er limit is ";ul
1290 print:printtab(2)"enter new va
lue:   ";:inputb$:ul=val(b$)
1300 iful<mathenprint:printchr$(18)
"minimum value="ma:goto1290
1310 sr=ul/20:dv=ul/5
1320 return
1330 rem-----------outside range----
----
1340 print"                        ":rem 39 spaces
1350 co=2:ro=20:gosub1370:print"out
side range":fort=1to1000:next:retur
n
1360 rem---------cursor positioning---
----
1370 printchr$(19)
1380 ifro>0thenpoke214,ro-1:print
1390 poke211,co
1400 return
1410 rem-----------screen dump--------
---
1420 open4,4:print#4
1430 if st=-128then1460
```

Maxwell's Software Galore advertisement — 24 Hour Mail Order

```
1440 close4:sy=49681
1450 return
1460 printchr$(147):print"printer n
ot on : press a key":close4
1470 gosub390:return
1480 rem----------add to prior------
1490 printchr$(147)
1500 gosub510
1510 return
1520 rem------------3d graph--------
1530 ifn=0thenreturn
1540 t=10:w=0:c=1
1550 l=4+(40-len(t$))/2
1560 gosub1850
1570 forj=1ton-1
1580 k=int(q(j)/sr+.5)-1
1590 ifk<0thenk=0
1600 ifq(j)>0andk=0thenk=1
1610 x=20-k
1620 gosub1730
1630 ifj=n-1orj=12orj=24orj=36orj=4
8thengosub1660
1640 next j
1650 return
1660 geth$:ifh$=""then1660
1670 t=10
1680 ifh$="p"thengosub1420
1690 ifh$=chr$(32)thenj=n-1
1700 ifj=n-1thengosub1850
1710 return
1720 rem---------vertical bar-------
1730 t=t+2:poke646,c:c=c+1
1740 ifc=14thenc=1
1750 printchr$(19);
1760 ifq(j)=0thenreturn
1770 fori=0tox-1:print:next
1780 printtab(t)chr$(206)chr$(208)
1790 fori=1tok
1800 printtab(t)br$
1810 next
1820 printtab(t)chr$(18)chr$(160)ch
r$(146)chr$(206)
1830 return
1840 rem----------background--------
1850 poke53281,0:poke53280,0:w=w+1
1860 printchr$(147)chr$(158)tab(l)t
$chr$(156)
1870 fori=1to5
1880 printl3$
1890 printtab(9)chr$(170)
1900 printtab(9)chr$(170)
1910 printtab(9)chr$(170)
1920 next
1930 printz;tab(9)chr$(206)l2$
1940 printtab(8)chr$(206)tab(12)lb$
(w)
1950 printtab(7)chr$(206)tab(12)lc$
(w)
```

```
1960 printtab(14)chr$(155)"p - to p
rint"chr$(156);
1970 printchr$(19)
1980 printul:print:print:print
1990 printint(ul-dv):print:print:pr
int
2000 printint(ul-dv*2):print:print:
print
2010 printint(ul-dv*3):print:print:
print
2020 printint(ul-dv*4):print:print:
print
2030 return
2040 rem---------sc.dump code-------
2050 data 72,138,72,152,72,169,4
2060 data 162,4,160,255,32,186,255
2070 data 32,192,255,162,4,32,201
2080 data 255,169,0,133,253,133,254
2090 data 133,251,169,4,133,252,169
2100 data 0,133,2,170,160,0,177
2110 data 251,133,98,165,251,24,105
2120 data 1,133,251,165,252,105,0
2130 data 133,252,165,98,201,34,208
2140 data 6,165,2,73,1,133,2
2150 data 165,2,201,1,208,14,165
2160 data 98,201,128,144,8,56,233
2170 data 128,133,98,76,128,194,165
2180 data 98,201,128,144,15,56,233
2190 data 128,133,98,169,1,133,99
2200 data 169,18,157,0,196,232,169
2210 data 0,133,100,165,98,201,32
2220 data 176,4,169,1,133,100,165
2230 data 98,201,96,144,4,169,1
2240 data 133,100,165,100,201,1,208
2250 data 10,24,165,98,105,64,133
2260 data 101,76,198,194,165,98,201
2270 data 32,144,11,201,64,176,7
2280 data 165,98,133,101,76,198,194
2290 data 165,98,201,64,144,7,24
2300 data 165,98,105,32,133,101,165
2310 data 101,157,0,196,232,165,99
2320 data 201,1,208,10,169,146,157
2330 data 0,196,232,169,0,133,99
2340 data 230,253,165,253,201,40,240
2350 data 3,76,56,194,165,2,201
2360 data 0,208,6,32,18,195,76
2370 data 252,194,169,34,157,0,196
2380 data 232,32,18,195,230,254,165
2390 data 254,201,24,240,3,76,51
2400 data 194,169,13,32,210,255,32
2410 data 231,255,76,67,195,169,18
2420 data 32,210,255,169,16,32,210
2430 data 255,169,34,32,210,255,169
2440 data 16,32,210,255,160,0,185
2450 data 0,196,32,210,255,200,202
2460 data 224,0,208,244,169,8,32
2470 data 210,255,169,13,32,210,255
2480 data 169,0,133,253,96,104,168
2490 data 104,170,104,76,76
```

Budget Spreadsheeting with ...
D G calc

by Ken Longshaw

SPREADSHEETS ARE supposed to take the boredom and tedium out of manipulating figures, or number crunching. They do. Pages of figures, the raw data, is put into cells or work spaces. You then define formulae to manipulate the cells and produce sums of columns, rows or more complex equations depending on your application. Change one cell, and the result is instantly recalculated enabling endless What IF? type questions.

At the end a manager can tell if the company is going bust or making profits. A price list takes five minutes to update not a whole day. Cashflows are a necessary business tool as are forecasts and costings. Spreadsheets make these types of day to day requirements far less time consuming to produce.

Some spreadsheets like Lotus are able to dance and sing, the operator can get really inventive and the list of reports, that's the results of the formulae you run, is endless.

However *D G calc* is not out to do that. The documentation says go buy *Lotus* and a PC if you want the bells and whistles. (*Of course, we would recommend Maxiplan Plus or the Advantage for the Amiga - Ed.*)

D G calc has the basics. It is a fact that ninety percent of spreadsheet users seldom use all of the functions available. So in the interests of price and the ecology those functions were simply left out. This is not to say *D G calc* is a toy. It is the result of careful examination and research in to the world of spreadsheet applications, so the flyleaf tells us. In reality it is a honed-down, efficient and uncluttered tool. All of the essentials are there and the features left in still make good fireside reading.

Specifications

● Some of the more eye catching include, instant recalculation, integration with any ASCII files from other programs, full windowing allowing a column or row to remain in view as the rest of the spreadsheet scrolls underneath, 52 user definable variables and nine programmable Function keys. Printing functions include automatic titling and paging. Mouse support is also a plus.

Operation

● *D G calc* is memory based so it is fast. It is also limited only by the size of memory you can afford. Basically though, 512 rows, along the page, and 52 columns down the page will be the outside range. That gives you a total of 26624 cells, individual items.

Control of the spreadsheet is either Menu or Browse based. The Menu option is for selecting main functions like Print, Edit, Import, Copy, etc. Items on the menu can be cursor selected or called by first letter, and for the incurable mousers, yes, point and clicked.

For scrolling through a spreadsheet Browse lets you edit as you go. A host of short cut keys are listed and make life easy. A powerful line editor also is part of the package.

The Manual

● A list of the functions in the manual is accompanied by an easy to follow tutorial. This is a hand held walk-through, setting up a simple price list for haberdashery. It makes clear what the spreadsheet can do in a stock pricing form. A lot of the terms needed to talk Spreadsheet are explained in simple form and examples given.

On the whole it is a satisfactory guide but by no means an exhaustive tutorial document on spreadsheets.

Generally

● There is not a lot to say about a spreadsheet that isn't boring so I won't, but if you want a sensibly priced product that does the mundane number crunching, look at *D G calc*. ❑

Review copy supplied by Pactronics (02) 748 4700.

Increasing BASIC speed

by David Williams

BASIC IS SLOW! This is because it is an interpreted language, rather than a compiled one, or even straight machine language. What is the difference, you ask? Well, machine language is the computer's native tongue, so to speak, just as most of us speak English naturally. But BASIC is what the computer starts up in! How can machine language be its natural language?

This is because BASIC is just a big machine language program, so as to make programming easier for us. The earliest computers had to be programmed in binary, so consider yourself lucky!

Now, BASIC is an interpreted language. What this means is that the computer reads a BASIC command, and then has to look this up in its dictionary, to see if it exists (if not, you get a syntax error).

If so, it jumps to an appropriate subroutine to perform the task requested. This happens every single time. Take the following program:-

```
10 print "hello"
20 goto 10
```

To start this you type RUN. The big machine language program looks RUN up in the dictionary, and sees that it is a legitimate command. It then looks up a table of addresses to see where to jump to, ie: the RUN routine. This says to start execution of a program, and so some flags are set in memory, and BASIC then has a look at line 10. This says PRINT, so it looks up PRINT, then the table, and jumps to the subroutine.

This has a look at what is following the PRINT, and sees "hello", so "hello" is printed on the screen. Then line 20 reads GOTO. BASIC looks to see if GOTO is a real command, sees where to go to, and is told to continue execution at line 10. Line 10 is searched for and found. It says PRINT.

BASIC then looks up PRINT . . . and so on.

With a compiled program, a BASIC (or some other high-level language) program has been translated into machine language all in one go, and then saved in this form. The only BASIC command used is one such as SYS to start execution, and the rest, no matter what it was written in, is in machine language. The computer understands this better than anything else, and so the program runs very fast.

Most people do not like machine language (or assembly language, which is almost the same thing). And if you find a bug in your compiled program, you have to edit the source code, and then recompile it, test it, and so on. That is one of the main advantages of BASIC - its great editor.

This article is about techniques to speed the interpreter up, and so you do not have to lose the editor.

Many ways of programming for speed are at the expense of other considerations, however, most notably readability. There are many

people who say this is the most important factor in programming. This emphasis on legibility is known as structured programming, and leads to many pretty looking listings. Unfortunately, they take up memory, and are mostly slow and inefficient.

I taught myself to program on a VIC 20, and quickly had an unstructured style in order to fit the damed program in! I upgraded to a 64, and carried my style with me. I still got several 'out of memory' errors, though. Now, on my 128 I don't have to worry about that. I still find I am counting bytes, but my emphasis is directly on speed. If a routine can be made quicker by rewriting it, taking up more memory, I will do it.

This is a general article, and virtually all Commodore owners should be able to use all the ideas.

Loops

One of the most common things in a program is some sort of loop. Say, moving a sprite across the screen. Many early programmers would use an IF command as follows:-

```
10 x=x+1
20 poke 53248,x
30 if x=255then end
40 goto 10
```

It is better to use a FOR loop, ie:

```
10 for x=1to 255
20 poke 53248,x
30 next x
```

This sort of loop is quicker than IF, which must perform a comparison 255 times. There are also other reasons why the example given is bad, and shall be mentioned later.

Now, take this Pythagorean calculator program:

```
10 for a=1to 20
20 for b=1to 20
30 c=sqr(a^2+b^2)
40 next b
50 next a
```

This is quite slow, mostly due to the SQR function, that calculates square roots, and also the up arrow, that calculates exponents. However, you will notice that there are two loops here. One where the variable b is incremented, and one where the variable a is incremented. In line 30, a^2 is evaluated 400 (20 x 20) times, when it only needs to be 20 times! Make these changes:

```
15 x=a^230 c=sqr(x+b^2)
```

and you will find that it now runs much quicker. FOR a=... is known as an outer loop, and FOR b=... is known as an inner loop. All calculations that are dependent on the value of a should be made between the outer and inner loops.

If a constant is used many times in a program, such as 2.71828, or ·9.8, set a variable equal to the constant at the beginning of the program.

```
10 e=2.71828:g=·9.8 for instance.
```

This is because every time BASIC comes across a number, it must convert it into binary. If your constant is used many times, this conversion must be done many times. By assigning it to a variable, the conversion is only done once, as it is stored in memory in binary. You will also save space, as a one or two letter variable name is shorter than a seven digit number!

Another way to speed number-crunching up is to use integers, which are a variable name followed by a percentage sign, %. An integer is quicker as it is a whole number, and there is no complex maths that is associated with decimals. An integer variable is not usually allowed in a FOR loop, though.

```
10 for a=1to 100   will work, but
10 for a%=1to 100  will not.
```

NEXT statements

NEXT statements are the next area to discuss. They are placed on what is known as a LIFO stack, which means Last In First Out. Therefore, the last FOR command found is the one jumped to at a NEXT command. A variable after the NEXT is therefore not needed in most dialects of BASIC. Commodores don't require them, but my PC-2 pocket computer does. So, the Pythagorean calculator can have two new changes:

```
40 next
50 next
```

It will now run faster, as it just jumps back to the last FOR command. Previously, BASIC had to search through the stack for the loop associated with the variable following the NEXT.

As mentioned, exponentiation and square roots take a bit of time. That is due to their nature. There may be some alternative function that you can find, that will achieve the same result. Multiplication, for instance, is a quicker operator, and so instead of using a^2, ie: a to the power of two, use a*a, which is the same thing. Make the next two changes:

```
15 x=a*a30 c=sqr(x+b*b)
```

This program is certainly quicker than it was before! (Although it still does not really do anything, it does nothing faster.) The time saved is even greater with bigger exponents.

Calculating z*z*z*z*z*z*z is a lot faster than calculating z^7. This saving would make a big difference in animation routines. However, we can not always take the easy way out.

There is not really any simple arithmetic equivalent of SQR, and so for functions like

that, it would be best to create a look-up array at the beginning of the program.

```
10 dim s(20)
20 for a=1to 20
30 s(a)=sqr(a)
40 next
```

And from then on, when you need to know the square root of a number, use s(x) instead of SQR(x). Here's an example using a sprite and trigonometry:

```
10 v=53248:a=165:b=140:c=90
20 for i=832to 895
30 poke i,255
40 next
50 poke 2040,13
60 poke v+21,1
70 poke v+39,1
80 dim s(360),c(360)
90 for d=0to360
100 s(d)=sin(d*pi/180)
110 c(d)=cos(d*pi/180)
120 next
130 for x=0to360
140 poke v,a+c*c(x)
150 poke v+1,b+c*s(x)
160 next
170 goto 130
```

You could rewrite that if you like, using SINe and COSine instead of the array, and watch it crawl along. If your numbers are all integers, you could even use an integer look-up array! Arrays however, use up a fair bit of memory.

Have a look at line 10, and you will notice that there are several commands all one line. This is possible, and saves time. It also saves memory, as five bytes are required for every line, whereas the colon needed to separate commands only takes one. Be careful when using IF however.

```
1000 if a>0then print "you lose!":goto 1020
1010 print "you win!"
1020 print "another game?"
```

If you try to compact that and put:

```
1000 if a>0then print "you lose!":goto
1020:print "you win!":print "another game?"
```

you will have a bit of a mess.

Anything on a line following an IF is only executed if the condition is true. Therefore, the GOTO 1020 in line 1000 is only executed if a>0. So, in the new program the computer will look at line 1000, and compare a to 0. If it is greater than nought, "you lose!" will be printed, and the computer will attempt to go to line 1020 (although it no longer exists, because it is joined to line 1000, and so an error will occur) and everything else on the line is ignored. If a is less than nought, or equal to it the computer will go on to the next line after 1000. The "you win!" will be completely ignored, because the condition is false, a is not greater than nought. Makes sense?

Therefore, watch out for conditional statements when joining lines together.

As stated, numbers had to be converted to binary. Nought is pretty much an exception, because 0 is 0 in any numbering system. It still takes a bit of time to evaluate, however. A

quicker way of expressing nothing is to just use a decimal point.

```
10 a=0  is slower than
10 a=.
```

Variables

Now, another thing you should know is that variables are stored in memory in the order that they are encountered. In the listing above, v, a, b and c are stored before the sine and cosine arrays. When BASIC searches for a variable, it starts from the beginning of the list, and progresses from here. It therefore makes sense to define the most commonly used variables at the start. This can be done in several ways. They may be set as specific variables:

```
10 a=5:b=7 or,
```

they may be set to zero, and changed later. This can be done by:

```
10 dim a,b
```

Notice we use a DIMension statement here. This command works on all variables, not just arrays. Here, it defines the two variables a and b as nought. There are also many shortcuts in BASIC. The LET command is purely optional, and you will notice that I have not used it once. It just carries over from maths, where you say 'let x=5'. On a computer, x=5 is sufficient. In an IF...THEN structure, the THEN may be followed by a line number (and no GOTO needed), or may even be replaced by a GOTO and a line number, if a branch is desired, ie:

```
100 if x=5goto 200
```

Semicolons are not required in PRINT statements, except at the end of the line if you wish the next PRINT to continue on. Both of these give the same results:

```
10 print "name:";n$;
"age:";a;"hello"
10 print "name:"n$
age:"a"hello
```

And you will also see in the second line that there is no closing quote after the hello. The final quote is not needed, as the end-of-line byte signifies the end of a print statement.

Spaces are not needed in BASIC lines, either. I have included a

space after each command in these listings for legibility, but (back to our previous example):

```
10 x=x+1
20 poke 53248,x
30 if x=255then end
40 goto 10
```

can be easily written as:

```
10 v=53248:torx=1to255:pokev,x:next
```

And the very first example as:

```
10 print"hello":run
```

We use RUN here as it performs exactly the same function as the GOTO 10, but quicker as it is not followed by a line number, so no base conversions have to be done, and then a search for the right line number. RUN just jumps to the beginning, after clearing all the variables. This program doesn't use any variables, but that is something you should remember about RUN inside a program.

So if you use these ideas your program should really RUN and not just JOG. It is still easy to write structured programs like this, but if you really want to write for speed, that is something you must discard. But then, if you're a speed demon, you'll have been using assembly language long ago!   o

The Mega Entertainment Section

Edited by Phil Campbell

That's Entertainment
A round-up of this month's entertainment news and views.

Computer for Christmas?

● Maybe you're one of the thousands of lucky guys and gals who found a Commodore computer in your Christmas stocking. Whether it was a C-64, a C-128 or an Amiga, we're here to help. This is the place to look for all the latest news, views and reviews - if you want to know the latest in the world of entertainment software, look no further. And remember, feel free to write for advice - address letters to Phil Campbell, PO Box 23, Maclean NSW 2463.

Space Ace still to come

● *Space Ace*, the world beating sequel to *Dragon's Lair*, has been delayed again - I keep running the demo disk just to convince myself that my Amiga really can produce TV quality cartoons. Unbelievable. Questor's Tim Allison has been getting daily updates from the USA, where "the game has not yet been shipped due to a last minute technical hitch." Meanwhile . . .

Dragon's Lair 2

● In a surprising development, *Dragon's Lair 2* has just been released in the USA. Although not programmed by Don Bluth's ReadySoft team, the program uses identical technology to the original. *Dragon's Lair 2* will be exclusively distributed by Questor . . . it should be in the shops early this month.

Amiga Stunt Car Racer

● Questor have just released the Amiga version of *Stunt Car Racer*, a game that puts you in the hot seat of a mega powerful stunt car zipping around an elevated race-track. The Commodore 64 version is available already - not bad, but nothing compared with the 16 bit version, which has consistently been rat-ed over 90% in overseas magazines. Stay tuned for a full review soon.
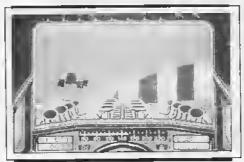
First Ubisoft titles released

● Questor have just signed an agreement with *Ubisoft*, the quality French software house responsible for *Pro Tennis*. This looks like the best Amiga tennis simulation yet. Play in all the major tournaments - the Australian open, French open - on clay and grass courts. There are TV style action replays with full rotating views of the court and stacks of other exciting features.

Sideshow complete with popcorn

● Step right up folks - the latest game from Actionware even includes a bag of genuine caramel flavored popcorn. Use your mouse or Actionware light gun to win tokens at the fair - a variety of shooting gallery style games are included. My review copy was delicious, but make sure you buy yours soon, before the popcorn gets stale.

More new labels for Questor

● *Questor* have just signed agreements with ARC, the software branch of *Atari*, and *Electronic Zoo*, a new company headed by Stuart Bell, former director of *Microprose UK*. Bell has plenty of contacts, and promises to source exciting new products from small companies in the UK.

It's finally Come from the Desert

● Mindscape's long awaited *it Came From The Desert* has finally arrived. 900 copies of the game were sold in the first 24 hours after it was released, so I guess you may be playing it already! Look for the full review in this issue.

New from Pactronics

● Pactronics have just released a bundle of exciting new games from Hewson. *Battle Valley* looks a little like the famous *Silkworm* - tanks and helicopters battling through dark, bomb scarred landscapes. With three level parallax scrolling, this one looks great. *Slayer* is a classic shoot-'em-up, though very difficult at first. I'll keep trying, though an interesting feature of both these games is that they disable Auto-fire joysticks. Looks like my scores are due to take a dive!

Steel puts you in the metallic shoes of a Robot Commando sent aboard a hostile space-ship to deactivate the defence system - an unusual looking game, with very nice metallic style graphics.

Speaking of unusual, have a look at *Raffles*. You play the part of a robber searching a house for hidden gems. There's not much razzamatazz - instead, this game goes for realism. It should really be called a "simulated house"; you can walk wherever you want, and pick up and move almost everything

Battle Valley

you can see. Fascinating stuff.

Australian book of hints and tips

● *Corish's Computer Games Guide* is packed full of hints, tips and Pokes to help you master your favourite game. Dean Corish, who runs a computer store in Bathurst, says that almost every day, customers came in asking for help with their games. He set about collecting, compiling and editing all the helpful information he could lay his hands on - the 303 page game guide is the result. Written, typeset and printed completely in Australia, the book is exclusively distributed by Pactronics. Good one, guys!

CD-ROM for the masses -
Mindscape to carry Codemasters CD Compilation Pack

● Fancy a compact disk with 32 games? That's right - a shiny silver musical type compact disk. All leads and software are provided to allow you to plug your CD into the joystick port of your C-64 - run a small program from disk or cassette, and then choose whichever track you desire for a fast 15 second load. This remarkable development brings CD-ROM within everyone's reach.

Game titles include *BMX Simulator*, *Pro Skateboard Simulator*, *Super Robin Hood*, *Grandprix Simulator*, *Vampire*, *Poltergeist*, *Red Max*, *Fruit Machine Simulator*, *Ninja Massacre*, *Magnum Force*, *International Rugby Simulator*, *BMX Freestyle*, *Pro-Snooker*, *SAS Combat Simulator*, even a *Motocross Simulator*. How much would

you expect to pay? Try $54.95 - amazing value. It should be in the shops now.

16 Bits software range

● *Mindscape* have announced ten new budget priced games for the Amiga - $19.95 will buy you a copy of *Infection*, which scored 89% in overseas reviews. Also in the range are games like *Kellyx*,

Double Dragon II

● This game promises to be huge. C64 and Amiga versions have just been been released, with superb graphics and much better gameplay than the somewhat disappointing original. Certainly worth a look.

Rock Star Ate my Hampster

● A bizarre title for a bizarre new music industry management game featuring stars like Tina Turnoff and Michael George. This game has a sense of humour, but at present it's only available on C-64 disk. ❑

Amiga Hints and tips

AMIGA   AMIGA   AMIGA

Dragons Lair - The final installment

● At last - the final installment of our complete solution to *Dragon's Lair*. Just in time, too, with two sequels just around the corner. Our thanks again to Ted Albert for submitting these tips... now let's get down to business.

Disk 5

Bedroom with stone wall

● Wait until the door has STOPPED FLASHING (important!) - the immediately go UP - UP.

Bedroom with stone wall

● Same again.

Treasure vault

● As soon as you hear the pretty music, go TOWARDS the rocking Candelabra (either LEFT or RIGHT) and catch it. The princess appears and says "Save me!"

Now do the following... if your first move was LEFT, then go immediately RIGHT - DOWN.

If your first move was RIGHT, then go LEFT - DOWN.

Dirk now stands before a teetering jewelled pillar. Go DOWN.

The princess reappears and says "Use the magic sword." On the word "sword", SLASH. The magic sword appears embedded in a stone.
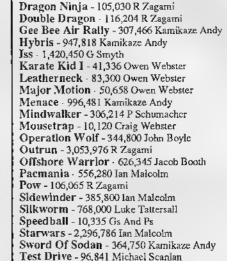
Disk 6

● As soon as you see Dirk standing in front of a blue pillar hiding from the dragon, go DOWN. (He ducks and avoids the claws).

Before he ducks, he looks around. Observe which way he looks first (left or right) and as soon as he has ducked, go the way he looked - LEFT or RIGHT.

He now stands before the Dragon. Don't do anything until he has drawn the magic sword from the stone. Then WHILE THE DRAGON'S TAIL IS HOVERING OVER DIRK duck DOWN. The tail slashes and misses. This is repeated two more times. Then Dirk jumps towards the Dragon with sword at the ready. The INSTANT HE LANDS, SLASH.

That's it! He throws the sword, slaying the Dragon. He bows humbly for a while; the princess appears in her crystal ball; this shatters, and they embrace. Your quest has ended - but stay tuned for *Dragon's Lair* ll !

Commodore 64 hints and tips

● Jason Rooimans of Taree, NSW sent the following codes and Pokes ...

Army Moves

● The code for the second stage is 15863.

Cybernoid I

● In the "redefine keys" option, type YXES for infinite lives

Cybernoid II

● In the "redefine keys" option, type YGRO for infinite lives

Bombjack

● Load the game, reset it and type POKE 5112, 234 (Return). Then type SYS 3101 for infinite lives.

Robocop

Load the game, reset it and type POKE 4416,0 (Return). Then type SYS 32768 for infinite lives.

Remember, send your hints and tips for Amiga and Commodore 64 games to Phil Campbell, PO Box 23, Maclean NSW 2463. There's been a bit of a drought lately, so get cracking. What do we have to do, offer prizes or something.?

High Scores

Amiga

Arkanoid - 976,548 Kamikaze Andy
Bubble Bobble - 1,009,000 Michael Scanlan
Continental Circus - 290,000 Phil Campbell
Denaris - 53,900 Peter Evans
Dragon Ninja - 105,030 R Zagami
Double Dragon - 116,204 R Zagami
Gee Bee Air Rally - 307,466 Kamikaze Andy
Hybris - 947,818 Kamikaze Andy
Iss - 1,420,450 G Smyth
Karate Kid I - 41,336 Owen Webster
Leatherneck - 83,300 Owen Webster
Major Motion - 50,658 Owen Webster
Menace - 996,481 Kamikaze Andy
Mindwalker - 306,214 P Schumacher
Mousetrap - 10,120 Craig Webster
Operation Wolf - 344,800 John Boyle
Outrun - 3,053,976 R Zagami
Offshore Warrior - 626,345 Jacob Booth
Pacmania - 556,280 Ian Malcolm
Pow - 106,065 R Zagami
Sidewinder - 385,800 Ian Malcolm
Silkworm - 768,000 Luke Tattersall
Speedball - 10,335 Gs And Ps
Starwars - 2,296,786 Ian Malcolm
Sword Of Sodan - 364,750 Kamikaze Andy
Test Drive - 96,841 Michael Scanlan
Tetrix - Level 100 Luke Tattersall
Typhoon - 54,255 Owen Webster
Whirligig - 7,428 Jonathan Scowen

Commodore 64

Bangkok Knights - 36,800 Nick Van Heeswyk
Bomb Jack - 344,560 J Jacobs
Bubble Bobble - 590,690 Chris Byrne
Fast Break -136 To 9 Chris Byrne
Giana Sisters - 69816 Nick Van Heeswyck
Handball Maradona - Level M Nick Van Heeswyk
Ikari Warriors - 93,000 Paul Millward
Int. Karate -113,700 Nick Van Heeswyk
Operation Wolf - 98,500 Chris Byrne
R-type - 548,310 Nick Van Heeswyk
Robocop - 82,250 Tim Lockwood
Salamander - 235,300 Paul Millward
Street Fighter -127,050 Chris Byrne (clocked)
Target Renegade - 330,450 Chris Byrne (clocked)

Don't be fooled by the name! There's no clowning around here - Continental Circus is one of the best car racing simulations around. Phil Campbell puts it through its paces.

YOU COULD HARDLY call last November's Adelaide Grand Prix a car-race. More like a car-wash. The rain came down in buckets, the drivers left in droves, and the ad-men from Fosters consoled themselves with a few quiet drinks at the bar. But who can blame the drivers? Grand Prix racing is a clearly a risky business, especially when "you've only got one life."

As usual, there is a computerised alternative - all the thrills, none of the danger, and depending on the quality of your roofing, it's almost certainly weatherproof.

The game is *Continental Circus*; it runs on my Amiga computer, and lets me battle it out for supremacy with 100 other drivers on the continental Grand Prix circuit.

Car racing games have always been popular. Video game arcades are full of them. Until now, though, it has been difficult to find a home computer version that generated the same sense of excitement. Usually, there is a trade off between the speed of the game and the quality of the graphics - if you want it to be fast, don't expect it to look good. *Continental Circus* is a welcome exception to the rule.

The game begins on the starting grid. A scantily clad young lady holds up a sign saying "5 seconds." I rev my engine, watch for the green starting light, and get ready to go - not really much different to your typical Sydney intersection.

The light changes, and the race is on. Before I can even find my gearshift, at least two cars have zipped past on my right. They leave little doubt about my present position in the field. "RANK: 100" says the score display in the corner of the screen. It can't get any worse.

I press the fire button to change into top gear, and things quickly start to improve. A few kilometres down the track and my speed has climbed to a respectable 398km/h. My rank is now 94. Ducking, weaving and defensive driving is the order of the day, especially when you find yourself behind a cluster of computer controlled competitors.

At this point the race is blatantly unfair. Your rivals can sideswipe and ram you with complete impunity - your car pours out a trail of smoke, they simply drive off laughing. Unfair to the extreme, but it does add quite a tactical element to the game.

Around the track are four pit stops, designated by a row of red markers cordoning off the left lane of the three lane track. When your car is damaged you may choose to pull in to the pits - but can you afford the time? A clock ticks off the seconds at the top of the screen, and when it reaches zero your race is over. Time extensions are given at each of three checkpoints - it may be wiser to ignore the pits and try for the time bonus. Sure, your car will eventually explode in flames, but you've got a few spares. In *Continental Circus*, time is more important than a few loose nuts and bolts.

Racing games that don't get the adrenalin pumping must be rated as dismal failures. *Continental Circus*, on the other hand, is full of high speed thrills. This game is fast, and it's got top class graphics and sound effects as well. There's plenty of atmosphere, with that elusive blend of challenge and frustration that makes it hard to switch off. This is one circus that will keep you entertained for hours. Nigel Mansell, eat my dust! ❑

IF YOU'VE BEEN CLEVER ENOUGH TO BUY THE WORLD'S SMARTEST COMPUTER, JOIN THE CLUB.

Ready for some action?
Andrew Baartz puts on his army boots and signs up as an ...

AIRBORNE RANGER

AIRBORNE RANGERS ARE the American equivalent of our Special Air Service members - better known as the SAS. It's like an elite commando unit that has air assistance. The SAS like to carry out their missions in small groups. As an Airborne Ranger, though, you're an elite unit of one, a member of the secret Special Operations Group.

The air-wing, with its hi-tech Osprey aircraft, drops you into the mission zone with three munitions pouches. In reality your mission begins before you leave the ground. You must choose the contents of each pouch, according to the type of opposition that you anticipate and the requirements of the mission. There is a weight limit on each pouch and on the amount a ranger can carry.

The ranger always carries his knife and his carbine, so a few extra clips of ammunition are worth tossing in the pouches. Grenades are handy, but for more specialised offensive procedures the LAW rockets (Light Antitank Weapon) and the Time Bombs (plastic explosives with adjustable detonation timers) are the real winners.

Although you wear kevlar body armour into battle it doesn't stop everything that comes your way and in the heat of battle you appreciate several first-aid kits. This phase, of packing the pouches, is strategically critical and requires a good understanding of the mission before you.

The tasks that you're asked to perform also require you to be trained in the warfare of the various terrains. The Field Manual gives great hints regarding both the terrain and the mission briefs. It also has the recognition patterns required to begin the game (ie the copy protection). There are basically three types of mission zones; desert, temperate and arctic - all with their individual hazards.

Twelve general types of missions are available for assignment. These include, destroying an enemy munitions depot. Infiltrating an enemy headquarters, stealing the code book from the communications post, and destroying the radios as you leave. Disabling enemy aircraft, before they "scramble" to safety. Capturing an enemy officer (this mission is so important that the Osprey will pick you up from the capture point). Sabotaging the natural gas pipeline. Knocking out the enemy's radar array. Disabling SAM sites. Liberating a P.O.W. Camp. Photographing a secret experimental aircraft. Freeing the hostages (this is dangerous for the hostages, since the terrorist have wired the building with explosives in anticipation of a rescue attempt). Creating a diversion and delayed sabotaging operations. All just part of a day's work when you're fighting for truth, justice and the American way.

After choosing an assignment and

carefully packing the pouches you are flown over the mission area. The Osprey flies in low, manoeuvring a little, assisting you as you take note of the targets and as you look for clearings in which to drop the pouches. You jump some distance away from the actual target and have to fight your way there. It's a good idea to have dropped pouches along your expected route to the target. As you parachute into the mission area you have to avoid landing on walls, in trenches, on barbed wire fences, in mine fields, beside enemy bunkers or machine gun nests and other hazards.

Once safely on the ground remember that time spent in reconnaissance is seldom wasted - switch over to map mode and work out the best route to the mission targets. Take particular note of the pick-up point. This is where the Osprey will pick you up from at the end of the mission. If things go dreadfully wrong, get to this point and recall the aircraft - get out alive!

You are given ten minutes in which to complete the mission. Opposition is fierce! On the way it's possible to avoid some patrols and hide - but rangers tend to kill every enemy unless ordered otherwise. Battle requires quick thinking and dexterity. The joystick turns your line of fire and a keyboard overlay comes also, to help master the use of different weaponry.

Playing it is a complex experience, demanding strategic planning, tactical decisions and crazed fighting. It's a hot game! □

RINGSIDE

FEARLESS GREG MUNRO put on his boxing gloves to file this report on Ringside, a heavyweight boxing simulation with real class...

Wait a minute, DON'T TURN THE PAGE YET - I know you hate boxing games, but this one's different!

No one hates boxing games more than me, and I groaned as *Ringside* appeared from the envelope, immediately wondering how I was going to find anything good to say about it. I needn't have worried. Several hours later I was happily facing my umpteenth challenge match for the coveted World Title (albeit still on level one!).

The opening graphics are exceptional, with a huge black boxer shaping up to you. He looks so real you expect his glove to come through the screen. A digitized soundtrack plays in the background, with voices chanting "Ringside, Ringside, Ringside," at various speeds and pitches.

The first game screen is rather confusing, until you read the directions. There's a lot of information crammed onto it. Most of it is simply lists to remind you of the various key functions, which I found helpful. The only time you need to use the keyboard is when you are arranging bouts. The gameplay screen uses the joystick.

With function keys you may configure your game by choosing one or two players; level (1 to 4); number of rounds; minutes per round; whether to spar or challenge someone; and so on.

When using a new boxer, you must enter name, weight, and age. Otherwise, you may load one of up to five previously saved pugilists. The new boxer will be given 100 points to start with, which may be distributed, using the various letter keys listed, between the categories of Left Upper, Right Upper, Left Lower, Right Lower, and Defense. As you win bouts, more points are awarded. Whilst setting up your boxer, you can practise using the punching bag in the small picture at the top right of the screen. It is a pleasant sur-prise to find that the joystick commands actually work, unlike many games of this type!

You may wish to do some sparring in the gym, choosing Offensive, Defensive, or Regular partner. Push F7, and a nice graphic of a typical sleazy neighbourhood gymnasium is loaded. When you're satisfied with your technique, you can return to the main screen and challenge the boxer of your choice in a championship bout.

The ringside scene that follows is very well done. You and your opponent bounce towards each other over the bright blue canvas. The crowd noise rises and falls. Flashguns pop in the audience. You make the first move, throwing a hard right jab, but your opponent is on his guard, and your blow slides harmlessly off his gloves. A heavy exchange ensues, with much puffing and grunting as blows land.

At the top of the screen are pictures of the opponents and bars representing their energy levels. Scoring blows are recorded by orange boxing glove icons which appear in respective boxes, so you may tell at any time who is in front. A timer records the number of seconds left in the round, which ends with the traditional bell.

Between rounds there is much disk grinding, which is a bit annoying after a while, since all it loads is the same graphic every time, of a woman holding up a Round Number sign. There is more material in the large Top Hat than in the rest of the bright red outfit she is almost wearing!

After this another scene is loaded, of your boxer in his corner with his Second and Trainer. You must use the joystick to control the second's towel-waving arm and get as much air to your man as possible. The better you do, the more his energy level will rise for the next round. This round break may be switched off if desired.

A bout may be won on points or by knockout. When a knockout happens, an action replay is given in slow motion, with a flashing "R", which is an amusing touch.

I enjoyed playing *Ringside*. Both one and two player games are a lot of fun. Its classy graphics and sound, good gameplay, and the planning that goes into a challenge, make it more than just a mindless beat-your-opponent-into-a-pulp game. Excellent value . . . for a boxing game! ❑

AMIGA

Shufflepuck Cafe

Excellent, but expensive. Those are PHIL CAMPBELL's two main impressions of Shufflepuck Cafe, the latest masterpiece from Broderbund. But read on.

TALK ABOUT LOWDOWN dives. This joint takes the cake. Sleazy surroundings, even sleazier people. And I use the term "people" loosely, because here at the Shufflepuck Cafe most of the customers are aliens. Saurans, Dweebs, Xytplians - anything and everything. They have only two things in common. They are sleazy, and they like a good game of Shufflepuck.

Fortunately, I have played Shufflepuck before, so I immediately felt at home. I played it back on earth, before video games took over all the fun parlours. The game was played on a smooth blue table covered with thousands of tiny air holes - high powered airjets made the surface friction free, and we'd slam a plastic disk up and down the table at high speeds. Remember? We called it "air hockey".

So here I am, standing in the doorway. A beaten up juke box in the corner pumps out a tired boogie rhythm - and the large yellow Shufflepuck table stands on the far side of the room. Several sets of hostile eyes are challenging me to enter. Some are sets of three. They wait for me to make the first move.

Casually, I point to the smallest figure in the room. Skip Feeney. He works in the local laundry putting cardboard in the collars of shirts. A novice player, and a bit of a wimp - the perfect choice for a warm-up game. We move to the table, and the challenge begins.

Skip is only just tall enough to see over the table, and his reflexes are slow. He blinks nervously through his glasses, and hits out at the puck. It slides across the table smoothly, and not too fast - I slide my puckwhacker to the right, and slam it back towards the corner. The puck slams home. "Good shot," says Skip - one point to the visitor. A robot arm chalks up the score on the automated scoreboard.
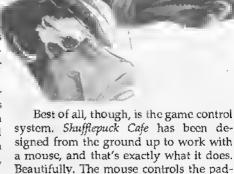
Soon the game is over. First to fifteen doesn't take long when you're playing against Skip. I scan the room for my next opponent.

Shufflepuck Cafe is a beautifully crafted computer game. So real you can almost breathe the smoke filled atmosphere. In essence, it's simple - the game itself is played out on the shufflepuck table, which fills your screen in perspective view. Your opponent stands at the other end, and you both control a rectangular paddle.

The graphics are a real delight, oozing with details. Most are irrelevant to the gameplay, but who cares? They add immensely to the atmosphere.

Sound effects are excellent too. From the background boogie to the thwack of paddle on puck, from the "Good Shot" of Skip Feeney to the angry grunt of pig-like Eneg Doowtrop - it's all here.

Best of all, though, is the game control system. *Shufflepuck Cafe* has been designed from the ground up to work with a mouse, and that's exactly what it does. Beautifully. The mouse controls the paddle on the screen so naturally that it feels like you are really playing the game.

I was so impressed that I decided to put the system to the ultimate test. I tried it on my Mum and Dad. The closest they ever get to a computer is watching "Beyond 2000" on TV. But in moments, they were playing *Shufflepuck Cafe* as if it was second nature. The whole process was intuitive; the paddle follows the mouse movements smoothly, and even detects acceleration - move forward fast to give the puck a good hard whack.

Easy to play but almost impossible to beat, great graphics and sonics - *Shufflepuck Cafe* has all the ingredients of a top class game. ❑

SEE DECENT AMERICANS TERRORIZED!

MAKE THEM ANTS CRY UNCLE!

HEAR TEENAGE GIRLS SQUEAL!

It Came From the Desert

by Phil Campbell

PRESENTED IN THRILL-O-VISION!

WHAT'S HUGE, BLACK, shiny, and very, very mean? I'm not exactly sure, but I'm standing face to ugly face with one of them now, and it's not very pleasant. It looks exactly like a giant ant, and it is about to crush me with a flick of its huge back leg.

Maybe he heard what I did to the ants that invaded our lounge room last night - Mortein and the vacuum cleaner. This could be a case of ant revenge.

The events of the last few days come rushing through my mind. Lizard Breath was just a typical town in outback California, populated with a typical mix of backwater townsfolk.

Everything was normal until a meteorite landed in the hills just south of town. Suddenly, strange things started to happen. Like the headless cow they found down at McWilliam's Dairy. Like the peculiar tracks they saw near the quarry. Like the sticky residue they found on the rocks just out of town. Until now, nobody knew what was going on - but now I've seen them with my own eyes. Giant ants, mutants, produced by the radiation from the mysterious meteorite, and they're about to attack the town.

I'm playing *It Came From the Desert*, the latest movie-on-disk from Cinemaware. This is a company with a pedigree. First there was *Defender of the Crown*, a medieval tale of epic proportions. Then came *King of Chicago*, a classic tale of gangsters in the fast lane.

Other titles have followed, all of them touted as "interactive movies." Graphics are always top class, the sound tracks are cinema quality, and the scripts have more branches than a gum tree. Cinemaware titles are a genuine experience. You become the star of the movie, making strategic decisions as the action unfolds before your eyes.

The game is controlled from a map of the town. Moving around is simply a matter of pointing and clicking with the joystick - when you arrive, the map disappears and the new scene is displayed.

Dialogue with other characters is shown in a conversation box at the bottom of the screen. There is also a list of joystick selected action options - usually you can choose to make phone calls or move around the map. Other options are added to the list in different situations. Will you fight against the ants, or run? Will you help the stranded hitch-hiker, or leave her to her fate? Some decisions are urgent, others can wait. It's up to you to make the right decision at the right time.

The game also features a number of arcade action sequences. If you happen to be injured - and you will be - you will find yourself in hospital under the care of beautiful Nurse Judy. Naturally, though, a macho adventuring type like yourself will not wish to be cooped up in bed. Time is short. Choose the ESCAPE HOSPITAL option from the action menu and you are launched into a madcap arcade sequence - "Catch him" cries the orderly as you guide your tiny figure around the hospital corridors looking for the exit.

There's more. Try a quick plane flight from the local airport, or a fight with the local hoodlums. And finally, confrontation with overgrown ants - aim your pistol with the joystick, and disable the beast by knocking off his antennae. Later, if you can persuade the National Guard to help out, you can fight off the ants with tanks and hand grenades. For now, though, a six-shooter is all you've got.
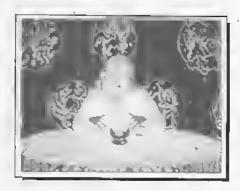
It Came From the Desert has got style. The game sets out to capture the feel of a 1950 style B-Grade sci-fi movie, and it succeeds. On the Amiga version the graphics are simply beautiful. Every detail of the desert town of Lizard Breath is crafted in exquisite detail - the atmosphere is captured perfectly. The sound track helps too, with all the right musical cliches to keep you on the edge of your seat.

When it comes to Cinemaware games I am a confirmed fan, but this one takes the cake. *It Came From the Desert* is a top

class game - and I'm already queuing for a ticket to their next production. ❏

Distributed by Mindscape
(02) 899 2277
RRP Amiga $59.95

High Steel

Greg Munro tries his hand as a rigger on High Steel, an addictive game that's hard to master.

HIGH STEEL TAKES me back to the good old days of the early eighties when we'd spend a whole Saturday morning in the laundromat at Kingsford playing golden oldies like *Donkey Kong*. "Oh well, just one more!" was the familiar call as the next lot of coins went down the chute in pursuit if the elusive high score or next level. *High Steel* is of that classic arcade style. It duplicates perfectly all the best and worst of the arcade genre.

The Hammond organ music at the start is almost enough to send your fingers racing for the shift-Amiga-Amiga keys, and the graphics are about on a par with a good C-64 game or old arcade game, but *High Steel* has what a lot of technically cleverer ones don't - it's fun to play! Like most good arcade type games, the gameplay is simple, easy to learn, but hard to master.

As an ace construction worker, your aim is to build as many high rise floors as possible with the vertical steel girders and floor segments provided by the overhead crane. Vertical girders must be locked in place by setting them down in the middle of a floor segment. The funny little moustached man you are controlling must then climb the girder with a floor segment (which looks like a brick) and place it on top of the girder, or one out from a girder that already has a brick on it. A completed level must be at least five bricks across, supported by two girders. If you succeed in making a level, next time you must construct two. Then three, four, and so on. I've only managed to get

to fifth level so far.

This may not sound too challenging, but you must contend with an infestation of Gremlins on the worksite. Gremlins look like two round balls, the one on top slightly smaller and to one side of the centre of the bottom one. Gremlins are very, very annoying. Their sole purpose in life is to stop construction workers from getting the job done. They do this in a number of cute and amusing ways. The most common is by dropping on your man's head, causing him to make an ugh! noise and sit down stunned for a few seconds. If he is halfway up a girder at the time, the result is "Aaaaaaaaa ... thunk ... tweet, tweet, tweet .." as he falls to the level below and expires with little stars orbiting his head. As with most arcade games, you get three lives, after which it's back to the Hammond organ music!

Gremlins also drop bricks, banana peels, and Gremlin eggs from the crane jib above. Gremlin eggs hatch into cute green creatures with yellow spots, faintly reminiscent of Fungus the Bogeyman. These are called Mothers. They don't move, but are fatal to touch, often appearing in inconvenient places.

If left, Mothers give birth to Crawlers, which are fuzzy beige caterpillars, also deadly to touch. Both can be killed by throwing spanners at them, as can Spitters, which are vegetable parasites that grow randomly from locked girders, but you must be careful there are no Gremlins trundling along in the way.

Gremlins are indestructible, and the spanner intended for the soft defeatable Spitter or Mother will bounce back, striking your worker on the scone and killing him.

To the right of the playing screen is the Data Panel, showing score, time bonus left, lives left, and item being carried. There are also bar graphs detailing floors completed, altitude, and player's energy. Energy must be maintained by eating sandwiches and coffee occasionally lowered by the crane. Unfortunately Gremlins like eating them too, often along with the brick they are sitting on.

So far I've managed to get as far as the fifth level, where some strange creatures looking like huge soap bubbles appear. Their function eludes me at present - they don't seem to do a whole lot, either nasty or benign - they just float along.

High Steel is a good value game, with all the tried and true elements of an arcade classic. The cute graphics and sounds, strange critters, and challenging gameplay, will keep you coming back for more. ❑

Personal Nightmare

Having trouble getting to sleep at night? Then here's something to really get you worried. Andrew Baartz reports.

PERSONAL NIGHTMARE IS a great 3D interactive adventure game. The animation is superb, with subtle movements and actions (and the occasional sound) adding heaps of realism. "Horror Soft" have paid a lot of attention to detail, making *Personal Nightmare* a three disk adventure. The whole game is quite eerie with a sinister plot. It's easy to learn how to play but much more difficult to survive!

The horror is precipitated by a letter from home. Your parents live in a quaint little English village called Tynham Cross. You haven't seen them for years when, out of the blue, you get a disturbing letter from your mum. Apparently dad has been acting a bit strange lately. He's been researching the life story of James Hyatt, who was vicar at the Church of St. Anthony about three hundred years ago. All you can remember about this fellow is that his own parishioners killed him in a bizarre ritual to rid the village of some demon, so the story goes. That was pretty common in that age of witch hunts, when people were even sacrificed over natural disasters.

Anyway, you're on your way to Tynham Cross. A second letter, from your dad this time, tells you that mum has gone to her sister's and the house is being redecorated, so he has booked you into "The Dog and Duck" Pub for the weekend. This is a worry!

During the opening sequence a clergyman is incinerated in his pulpit and a demon rises in his place. The bad news is that the current vicar is (or was) your father! Next, you find yourself in the bar of "The Dog and Duck." You check in after a long train journey. Mr & Mrs Jones are behind the counter and you start to look around and question people as they come and go.

The object of the game is to defeat the power of the demon who has taken over the lives of some of the residents of the village. This task requires you to identify which of the village characters have been taken over and then, by presenting the village policeman with the evidence of their horrific crimes, have them arrested. . While doing this you will meet and have to deal with one or two pets belonging to the devil and in case you get bored there are one or two people who need rescuing before they are subjected to some rather unpleasant rituals.

The game can be controlled with the mouse, although sometimes you will need to input commands with the keyboard. The game may also be played entirely by keyboard as a true text adventure.

The main area on the screen graphically displays the location you are in and the events taking place within it. On the right hand side there is a panel with an easy to operate command window. There is a left hand panel as well - the movement window - to help you keep your bearings as you move around the village. The window directly beneath these is the text response window and text input window. It's all carefully put together for a great adventure.

I decided to take my things upstairs and then have a wander around the streets. Nightfall descended quickly, and the streets grew darker. Nevertheless, I began my investigations. A few of the sites around the village were unapproachable, because of either angry tenants or evil forces that repelled my advances. I looked around the church and the vicarage. No sign of the oldies. The graveyard fascinated me and after poking around I found some catacombs and tombs.

I spent too long there, I think. I came out after midnight, was surrounded by ghosts and mercilessly killed. That was my first failure. Since then I've burst into flames a couple of times (after someone pronounced a curse over me) and a few other unspeakable fates have befallen me. I'm having a hard enough time preserving my own life, let alone saving anyone else. And for those who want to preserve their sanity, there are hints available from the writers. *Personal Nightmare* is absolutely addictive, and great value for money. Now if only I could get some sleep! ❏

Here's a new idea!
Homegrown software straight from the programmer
to you - without the middle man.
Phil Campbell investigates the ...

Citadel of Vras

Distributed by Megadisc
(02) 959 3692
RRP Amiga $19.95

NO FRILLS SOFTWARE is a concept that's long overdue. After all, we've been buying our groceries at Franklins for years. Sure, it takes a little time to get used to buying stuff in boxes without the pretty colour pictures. Black and white is not nearly so enticing - until you see the price.

The first "no frills" computer game arrived on my desk last week. It came from Tim Strachan, editor of the popular Amiga disc magazine *Megadisc*. The programmer had sent it to Tim with a simple request; "Put it in your public domain collection, or throw it away."

Tim, however, was too impressed to throw it away. Sure, it didn't have the spit and polish of a typical $89.95 commercial masterpiece - but it seemed far too good to go on the list of Public Domain freebies. And so, purely by accident, "no frills" software was born.

The game is *Citadel Of Vras*, and the programmer is a West Australian by the name of Gyan Sarvagata. This guy obviously knows his stuff.

I was quickly impressed - even though the concept of the game is far from new, the execution is excellent. *Citadel of Vras* is a classic "Fantasy Role Playing Game" cast firmly in the mold of *The Bard's Tale*.

In fact, the screen layout is identical to the *Bard's Tale* format, a fact acknowledged by the author on the title screen. A list of characters with their current vital statistics is displayed across the bottom of the screen. The top half of the display is split between a small picture of your current location and a text box describing the results of your actions.

The game is set on the far flung planet of Vras, once inhabited by a remarkably advanced civilisation. As is the habit of advanced civilisations, they had to leave when they found out how to make every-

thing radioactive. After all, accidents do happen. Before they left, though, they hid a magical talisman of immense power among the ruins of their ancient citadel. Your task is to find it.

Before you can begin your mission, though, you must create a team of adventurers. This is where you need good management skills, and a working knowledge of current Equal Employment Opportunity legislation. There are six character types, from which you must choose a team of five.

The characters have a variety of skills. The Jedi Knight, for example, is good with a sword, but lacks intelligence. The Denk Mentat is the opposite - a hopeless swordsman, but he can out-think almost anyone at thirty paces. Pick your team well - once you get to Vras, there's no turning back!

Exploring the Citadel is a huge job. There are nine mazes, tangled webs of corridors and rooms - each one must be searched to find the clues and objects necessary to complete the game. A 3-D view of the maze is provided on the upper half of the screen, smoothly animated with no perceptible delay between frames.

Naturally enough, you will meet all manner of nasties, whose sole purpose is to bring your mission to an unpleasant end. Most will attack without warning or provocation, some with weapons and others with psychic forces.

Battles are played out on the

text display. Choose your actions from a list of strategic options, then sit back and watch as the results are printed on the upper section of the screen. Strength, health and character point scores are adjusted on the lower half.

Citadel of Vras is good. Not quite as polished as the famous *Bard's Tale*, I'll admit, but all the elements of a successful strategy role playing game have been captured well. Graphics are not lush, but they set the scene nicely. Sound effects make good use of the Amiga's built in speech synthesiser, though a little music would have lightened the atmosphere.

Tim Strachan is distributing *Citadel of Vras* through Megadisc (ph 02 959 3692) for just $19.95. At this price, Gyan Sarvagata will be rewarded for a job well done. Tim will barely cover his costs. And you will get a good quality game with no fancy overheads - no fancy packaging, no expensive booklet, no full colour posters to stick on your wall. No frills. But it makes good sense to me. ❑

Adventurer's Realm

by Micheal Spiteri

HELLO TO ALL out there in adventure land! Hope you all had an adventurously wonderful Christmas and a happy New Year.

Welcome once again to Adventurers Realm, a column dedicated to covering anything at all about adventure games, which means hints, tips, news, views and reviews, gossip, rumours and laughs!!!

Write to me if you have problems in adventure games, or can offer help in some form or another, or you might want to chat about something concerning adventure games! My address is:

Adventurers Realm 1/10 Rhoden Court North Dandenong Vic 3175

(Wargamers, we cater for you too. Resident wargamer Barry Bolitho will help you out in any way he can. Mark your envelope "Wargame Section" and send to the above address)

Kamikaze Andy in his Dungeon will help you out in Role-playing games. Write to him at the following address (Andy does not have hint sheets)

Realm's Dungeon 44 Hawkesbury Drive Willeton WA 6155

Always enclose a s.a.e when writing to the Realm (otherwise you definitely won't get a reply).

Free hint sheets

The following hint sheets are available from 1/10 Rhoden Court address. Maximum four hint sheets put person!!!

- ● Bards Tale 1,2,3
- ● Zork 1,2,3
- ● Hitchikers Guide
- ● Hampstead
- ● Hobbit
- ● Castle of Terror
- ● NeverEndingStory 1
- ● Adventureland
- ● Borrowed Time
- ● The Pawn
- ● Pirate Adventure
- ● Deja Vu
- ● Dracula

Problems Problems and More Problems
(or the Demented Adventurers Department)

The following degenerates have been losing many nights sleep over many an adventure. If you can help them out, write soon!!

Sean O'Byrne of Henty in NSW is stuck in *The Case of the Mad Mummy*. Opening a particular wardrobe in the master bedroom is causing problems.

Next up is Robert "Hawke" Fletcher of Vermont in Victoria who is stuck up a pipe in *Plumber's Lament*. Rob writes "I have been stuck in this stupid drainpipe for weeks on end now. In fact, it's got so bad, it has made Jacinta, my girlfriend's, hair go all long and curly!!'

Somebody has to help Rob or else Jacinta will be forced to cut all her hair off!!

Meaghan Russell of Yerong Creek in NSW has a problem in a game that has been rearing its ugly head recently. In *Book of the Dead*, Meaghan is still stuck on the plateau during the early stages of the game.

Chris Morley of Broken Hill, NSW, has been battering through time in Domark's *Eureka*. The following problems are troubling Chris:

In Roman Times, how do you get the thorn out of the lions's paw?

In Caribbean, how do you use the number pad, also how do you get past the bridge?

Andrew Lai of Beaumont is S.A is stuck in *Phantasie III*. He wants to know how to get to the Castle of Darkness.

Dave Pittaway of Casuarina in the Northern Territory is stuck in two games. In *Zak McKracken* he cannot seem to light the branch in the bird's nest in the fire pit in the cave, and in *Arazok's Tomb*, just cannot get past the snake!

Mark Healy from Esk in Queensland in stuck in *Fish!* Firstly, how does he get the gargoyle into the altar? Secondly, how does he get out of the Secondary Control Room? Thirdly, what does he do on the Micky Blowtorch stage?

Shelley DuVal of Hamilton Hill is stuck in *Black Silver*, but she is having difficulty finding the King's Staff! Any takers?

Then there's Craig 'Striker' Wright of Epping in Vic who is stuck in the weird world of the *Sydney Affair*. Just some

hints will help!!

Noel McAskill is 50-70% through' *Mortville Manor*, but is puzzled by the diamond shaped opening in the attic and the cellar.

Terri Fogarty from a place with a long name in Western Australia writes in with a few problems. In *African Safari*, how do you stop losing the monkey when in the canoe? Then in *Dracula 1*, how do you survive the night, and where do you get the bone for the dog? Finally, in *Red Moon*, what do you have to do after you have found the *Moon Crystal*?

Stinger has caused a real sting in the Realm with his/her numerous problems. In *Knight Orc* how does it (shorter than writing he/she) enter the castle, and how does it recruit the dragon, mouse and troll? Then in *Times of Lore*, where is the ruined temple and Shadowpeak? Finally, in *Ultima IV*, how/where do youget the magic blue-light orb, and what are the co-ords of the Candle of Love?

R.S. Warren of Viewbank in Vic tried following instructions printed within these pages to solve a desert problem in

King Solomon's Mines, but to no success. Could someone clarify these hints please?

Not A Penny More, Not A Penny Less is the name of the game that is troubling The Big Diskette In The Sky (!!!) In fact, any help would be appreciated!!

Bradley Wenman of Beverly Hills in NSW is having enormous parmucles in *Ultima II & IV*. In *Ultima II*, Brad wants to know how to get the ring off Father Antos, and in *Ultima IV* (level 8 of Abyss), how do you get to the Altar room?

Nick Van Heeswyk from Mt Gambier S.A. is having problems in the old classic *Bastow Manor*. He wants to know how to get the brass key without Old Man Bastow taking it from him. Also, how does he open the sealed door and the door next to the stairs.

Trent Moreschini is having problems getting past the first part of *Rigel's Revenge*. Any takers?

The Realm has been unsuccessful in helping the perplexed Alex Harvey who is starving for a method to open the chest in the cellar of the enchanter guild in Infocom's *Sorcerer*. Exact help needed soon!

Mario Moeller is longing for the password required in Police Academy. More help wanted!

Reviews - Reviews - Reviews

● This month I've decided to review three quilled text adventure games, one of which has been available for a few months at a ridiculously low price, and the other two which should be available by the time you read this.

Review 1: **Stowaway**

(For the Commodore 64 - only $12.95 with many other programs in AC&AR Disk Magazine 13)

● Well, trust you to be a stowaway on a sinking ship. What's worse, is that everyone else but you has managed to get away safely, and guess what - the ship sinking pretty fast (so is the air!) which leaves you in a pretty bad dilemma (yes - you've been thrown in the deep end - ha! ha! ha!), just perfect sort of conditions for an adventure!

So that's where the game begins. There is a way out with a few not so obvious traps along the way - so tread carefully, and watch what doors you open.

This is your standard run-of-the-mill text adventure with the old verb/noun command entry. Fairly good vocabulary, I would have liked to see the problems a bit harder. However, it is a good game to start new adventurers off on. For $12.95 you cannot go wrong, and if you don't like it, you can have a go at the other adventure on the disk.

Stowaway (Author: Mario Moeller) on Disk Magazine 13.

Questor Adventurer of the Month

● Yes folks, if you missed last month's issue then you missed out on the great news that those great guys at Questor are now giving a free game to the Realm's Adventurer of the Month. Last month we gave away a copy of *Sleeping Gods Lie*, who knows what super smash hit you could win?

Review 2: **Dare**
(for the Commodore 64)

● Remember that advertisment for underwear? You know "One day, you're gonna get caught ... " Yeah, that's the one! Well guess what - it's happened. You play the role of Fred who has just finished his exams and has decided to have a booze up with all his mates. So a very intoxicated evening at The Swan results in you being dared into trying to get out of a large department store after it has closed. What you were not told is that you would be locked in the toilet in nothing but your underpants!

I don't think I need to say more about the plot except that you'll have weird and wonderful time playing this game.

Dare is a text adventure produced using Gilsoft's Quill Adventure Creator. Though you wouldn't know this unless someone like me told you. An extensive vocabulary and interesting atmosphere adds to the gameplay of this highly original adventure.

To get you started because I despise games that gets the player to think of uncommon words, you have to use words like feel and squeeze to get out of the first location. From here the game begins to make more sense.

One final thing, if you get sprung with your pants down trying to get out of the store, it could mean the end of your career (something to think about after all those years studying!!)

Dare (Author: Dorothy Millard)
Available soon from ECP Software - price TBA.

Review 3: Escape To Freedom
(for the Commodore 64)

● Author Mario Moeller has a thing about escapism. First he got us trying to escape a sinking ship in *Stowaway*, and now he has us escaping from enemy territory. As usual, you start off in the thick of things. You are (or were) a pilot, and you were flying over the enemy country when you were rudely sort of bombed down. Fortunately you survive and crawl to an old barn. Don't think you can have a snooze, cos the guys who hit you are on your trail.

So here you are in the middle of who knows where, in a barn that belongs to who knows what, being hassled by soldiers with you know what (bang bang).

Also designed on The Quill, means

the game is 100% machine code, quick response times, and is a full 64K adventure game. There is also a quick loading routine included!

The vocabulary is also quite good, as are the text descriptions. The game starts with fairly straightforward problems, however these get tougher as the red herrings become more apparent. Also, you have only 512 commands before game over.

Aimed at the more experienced adventurer, there are many places to visit and many problems to solve. The game accepts the ancient standard two word command parser.

Quite a good game considering it was Quilled, and most certainly worth looking at.

Escape to Freedom (for the C64 available soon from ECP. Price TBA)

Help Help and More Help
(or the Smart Adventurers Dept)

● Once again I'd like to thank everyone who contributed to this section of the Realm. If you were troubled back a few months ago, then the answer to your worries might just appear here!!

Game: Bastow Manor
For: James Turner
From: Nick Van Heeswyk
Help: Climb the tree and type break branch, then get it. Go to the cake and type look gate and get the key. Use the key to unlock the gate and the mail box. Look in the mail box twice.

Game: Bastow Manor
For: Aylmer
From: Nick Van Heeswyk
Help: Drop the branch to go over the snake pit. Wear the armour to stop Old Man Bastow from dropping the safe on you. Use the crowbar to remove the beam from the door. Enter remove beam.

Game: *Bards Tale I*
For: Gary Bau
From: Stinger
Help: The answer to the riddle "Once man alive, now living death, it drinketh blood, and stealeth breath" is vampire !!

Game: *Bards Tale II*
For: Andrew Hansen

From: Stinger
Help: The password of level of the Dark Domain is pass.

Game: *Ultima IV*
For: Peter Judd
From: Stinger
Help: The axiom is infinity.

Game: *Phantasie III*
For: Adam Pride
From: Andrew Lai
Help: To get out of the Plane of Light, go to the Town of Light and cast a transportation spell (either with wizard or priest). Then you can go to any other town you like.

Game: *Lords of Time*
For: Linda Ulett
From: A.Stivala
Help: Think about the picture of the man in the bath (MS: What kind of woman do you take Linda to be?) The game must be in verbose mode. What did a certain Greek philosopher shout out when his bathtub overflowed?

Game: *Hitchhikers Guide*
For: Linda Ulett
From: A.Stivala
Help: Tell the guards to drop their rifles and then shoot the rifles. You can

Realm's Clever Contacts

● As mentioned last month, the Realm is starting a clever contacts list. If you'd like to offer hints and tips, just list the games you can offer help in and print your name and address clearly.

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then run into the ship. Pick up the sharp stone and remove the towel from around your head to scratch your name on the monument.

Game: *Maniac Mansion*
For: Darren Kock
From: A.Stivala
Help: Fix the wire in the attic and then wait for Dr. Fred to have a game, before you play Meteor Mess. Take note of the high score for DF9.
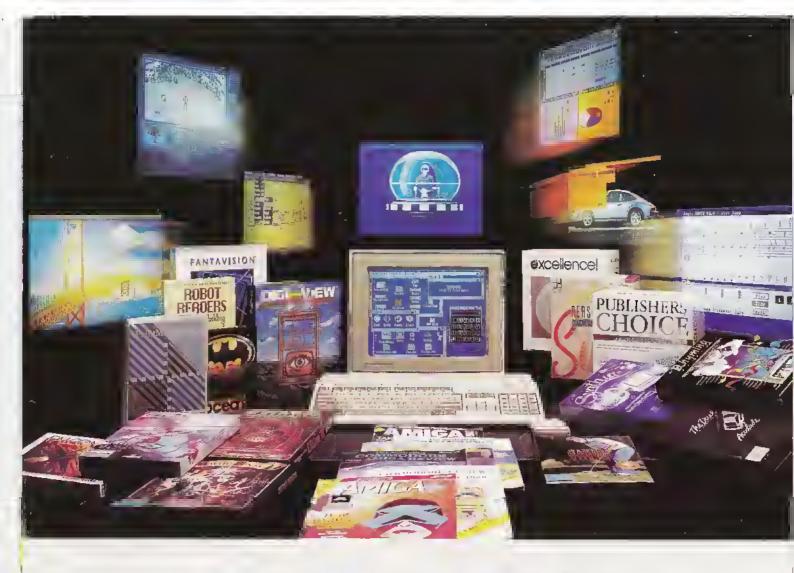
Game: *Red Moon* General Hints from Terri Fogarty
To open the safe in the treasure vault, enter turn safe. Beware of opening the box inside. To get rid of any foes, type in bury watchdog etc.

Game: *African Safari* General Hints from Terri Fogarty
You must get the flute from the monkey to get the snake off the paddle.

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